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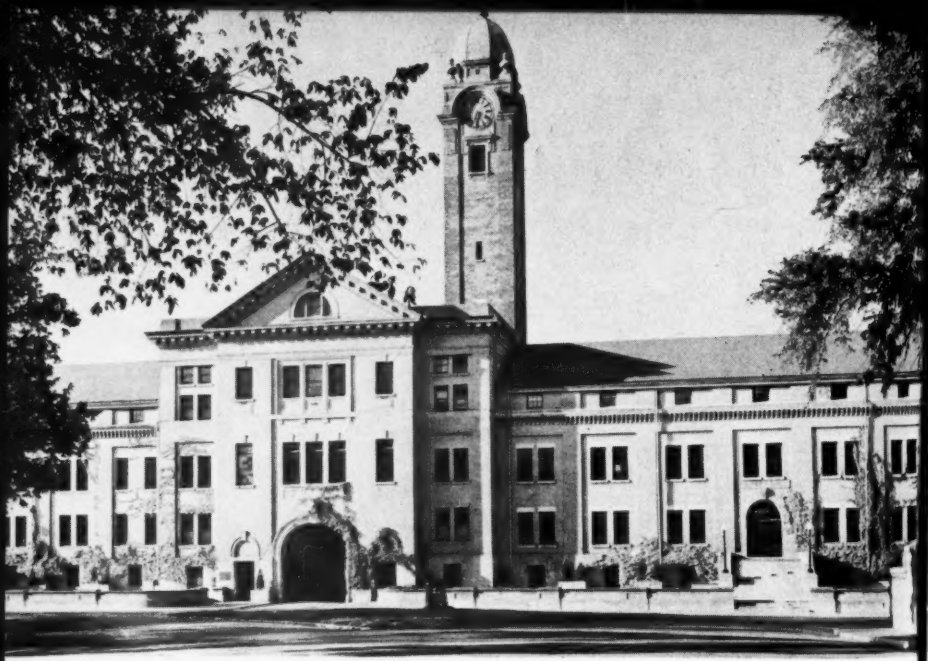

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CANNAE--216 B.C.

Colonel G. Patrick Welch, *General Staff*
Chief, Public Information Division, Department of the Army

***. . . For who is so indolent or worthless as not to wish to know by what means and under what system of polity the Romans . . . have succeeded in subjecting nearly the whole inhabited world to their sole government—a thing unique in history?*—Polybius, the Greek historian.**

The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

NEAR the little town of Cannae, a supply base for the Roman armies of the time, on the Aufidus River in southeast Italy, not far from the modern port of Bari, in the early summer of 216 B. C., a tight disciplined force of 40,000 Carthaginian troops and Gallic allies beguiled, surrounded, entrapped, and slaughtered an opposing Roman force nearly double their number.

Tactical Victory

Cannae has been described as the perfect battle. It is, in both senses of the word, the classic example of the nearly perfect tactical combination of surprise, maneuver, and deception to gain a complete victory over a superior force. As such, its planning, development, and successive phases have been studied for generations in tactical schools.

But Cannae is, I think, much more. Von Clausewitz gets credit for the dictum that war is but the ultimate weapon of politics; that politics, having set the stage for war, continues to function during war; and that hostilities once over, politics again negotiates the frequently undetermined settlement. Cannae is a case in point.

The outcome of the Second Punic War, of which Cannae was the outstanding encounter, was, in fact, determined by the political acumen of Rome shown in actions taken before the war began. A study of these actions, particularly in the area of Rome's political arrangements with the but recently conquered cities and tribes of Italy, but more generally in the nature of the Roman Republic's political and military institutions, suggests that the victory of Rome was from the first implicit.

There seems to be a lesson here, not without significance in our own troubled times. History is the experience of our ancestors. We do not need to go on making the mistakes of the past if we can learn from the record.

We are only beginning to understand the interplay of majestic long-term forces affecting the fate of man. The great philosophic historians—Herodotus, Thucydides, Polybius, and, much later, Gibbon, and, in our own day, Toynbee—have all endeavored to read cause and effect, a pattern of human relationships, a hope for guidance in the future from the lessons

A nation, like an individual, needs from time to time to be called by adversity to its heritage. How it meets such a challenge appears to set both the stage and the purpose behind its later greatness or futility

of the past, into the study of history. From the accumulated data and recorded experience of history certain patterns do emerge, which can be applied to the problems of our own day.

The 'Eucomene'

The Mediterranean world of the five centuries before the beginning of the Christian Era was to all effective purpose a closed living space. Within it, nations and peoples could, and did, react each upon the other, in all the peaceful and violent, beneficient and murderous, devices of social and economic intercourse.

But the area, as a whole, was as remote from contemporaneous but geographically distant civilizations and societies as if the latter had been on the moon. Diplomatic converse with the co-existent emperors of Cathay was no more a possibility than the dispatch of an ambassador to the undreamed of Mayans of Central America.

Within the Mediterranean world of that time, the peoples and nations were, as a whole, self-sufficient, self-contained, and of self alone aware.

The concept of such a closed living space, isolated in time and space, permits us to draw certain lessons applicable to our own troubled times, when the living space in which people can intermingle and interact is the entire planet. It will be convenient to coin a word to describe this concept. In Greek times, the word "oikoumene" meant all the land area then known habitable by civilized man. It later came to mean the area reached and affected by Greek civilization, and, therefore, included, at both ends of the Mediterranean, lands occupied by "barbarians." If we can transliterate this word of such respectable antiquity into English, we have "eucomene" to describe the condition of a closed living space, temporarily isolated in time, and always subject to expansion by contact with other eucomenes, civilized or barbarous.

Near the central time point of the isolation of this eucomene of the Mediterranean world, the battle of Cannae was fought. To understand its significance, in the deeper sense of the word, it is necessary to understand something of the major factors affecting the development of the entire area.

In days already dim when Homer sang, the isolation of the Mediterranean area had been breached as successive waves of hardy barbarians, variously termed Achaeans and Dorians, poured into Asia Minor and the Grecian Peninsula from some distant northern home. Conquering and driving into remembered myth the Minoan civilization they found, these hardy folk, gifted with a subtle sense of individual importance and personal freedom, laid the foundations of the golden age of Greece.

Migrating Nomads

More than a thousand years later, another wave of migrating nomads swept down on Italy and sacked the then young and weak city of Rome. But this was 170 years before Cannae. To the people of the young and vigorous Roman Republic, newly master of Italy, conquerors of Sicily in the first struggle with Carthage, its memory must have been as dim as is the sack of Washington in 1814 to us today.

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The idea that these two major movements, originating in population and pasture pressures far back in Asia, would over a thousand years be repeated again and again in size and tempo until, by expanding the eucomene of the Mediterranean to include northern and eastern Europe, they would bring down imperial Rome itself could not reasonably have been foreseen by those then alive.

Within the confines of the eucomene itself, from the very beginnings of recorded history, nations and ideologies developed in isolation, came into contact as trade routes and communications brought them together, and reacted violently to each new encroachment. Philosophers and historians pondered the problem of peace among the peoples.

The answer, when it came, was pragmatic, supplied by the power of Rome.

Roman Power

The power of Rome combined all those factors essential to success. Before the rise of Rome in the Mediterranean, a long succession of competitors had assayed the domination of the area. Each had failed in the end. In each case the failure is traceable to the lack of one or more of the factors Rome supplied.

The immediately apparent factors were military and administrative genius. In time, the organization of the Roman Legion proved superior to all military formations theretofore devised. This organization was not simply tactical. It was strategic, hereditary in obligation of service, harsh but just in discipline, and tied for centuries to unquestioned devotion to the state. It was soundly administered, and supported by an admirable and wholly adequate logistic doctrine. Generation after generation the honored legions of Rome carried their standards the round of the then known world, tied together in one enormous system of command, supply, and administration. The legions were not less an army for being also an institution.

The Romans were as much the organizers of their day as the Americans are of ours. Their high sense of duty, nurtured in the Roman tradition from infancy on, provided over the centuries an unending stream of competent public servants, both military and civil. The vast numbers of these men of unimpeachable integrity and selflessness are lost in the relatively few notorious and, therefore, more newsworthy scoundrels who even then existed probably in about equal proportion to our current experience. Not for centuries after the Republic was lost in Empire did Roman virtue, its traditions defeated, its examples profaned, go down in a morass of corruption, venality, and opportunism.

To these high qualities of their youth, the Roman people added the saving virtue of common sense, including an acute perception of political values. Without giving them too much credit, they were not above using magnanimity as a tool of policy. If co-operation based on a shrewd understanding of the psychology of conquered peoples was more inexpensive and more productive of desired results than harsh repression, it was employed as the judgment of the commander, the pro-consul, or the ambassadors of the Senate saw fit. It is fair to say that a set of moral values, stern certainly, demanding beyond question, but wholly conducive of the formation of character, guided Roman policy.

All these perhaps would not have been enough were it not for the universal fortitude and patriotism endemic in the Roman people. The world had to wait twenty-one centuries for the days of Dunkerque again to bring out in an imperial nation the indomitable qualities displayed by Romans of all classes throughout the long years of the Second Punic War when Hannibal and his Carthaginians strode unchallenged the length and breadth of

all Italy save only high-walled Rome herself. When these qualities were eventually lost in the empire that followed Diocletian, Rome herself was surely doomed.

Many attempts before that of Rome had been made to unite the eucomene of the Mediterranean under the one government—the one source of law and order which alone could guarantee and maintain an effective peace.

In the earlier days of Mediterranean civilization the Egyptians had solved the problem for their valley, only to lose again when the valley of the Nile, sacrosanct and inviolate for 2,000 years, was united with the Mesopotamian and the contiguous lands under the urging lash of Cambyses the Persian.

The Age of Colonization

In the Aegean, the 2,000-year-old, yet fantastically modern, thalassocracy of "century-citied Crete" went down before the onslaught of the Achaean invaders. The Greek cities were born, grew, and flowered into a greatness of thought and vigorous achievement which spread like wildfire over the Mediterranean in the Age of Colonization (800-600 B. C.). In spite of their magnificent gifts, in spite of their unique discoveries in the art of democratic self-government, they never learned the secret of higher political integration. In the war between Sparta and Athens, the Greek cities committed political suicide and laid themselves open to the mastery from Macedon that they could not supply to themselves.

Alexander the Great, the Macedonian educated by Aristotle, beyond all question had in his mind a vision of the eucomene united, strong, stable, and great in peace. The military weapon he had. His conquests bear witness to its efficacy. The other tools—the administrative gifts, the reservoir of citizens inculcated in his dream, ready in successive generations to give their services for life, and their lives eventually, to its realization—he did not have. Nor did his empire survive his passing.

And in the west, about the eighth century before Christ, two cities were founded to grow in power and in strength, until, coming at last into contact, they proved again by their interaction the axiom that peace cannot long exist where two approximately equal powers dispute the area of their common life and the ideology under which it shall live.

Carthage inherited from Crete, through the Phoenicians of Sidon and Tyre, the control of the "wine dark sea." Their thalassocracy, based not far from the modern Tunis, in the fourth and third centuries before Christ was a thriving, immensely rich city, mistress of the Mediterranean, practicing, if it did not codify, the principles of sea power set down by Mahan; master of the African littoral from Cyrene in Libya to the awesome pillars of Hercules, beyond which rolled the unimaginable ocean—unimaginable, that is, to all save the Carthaginians themselves. The Carthaginians had taken over from island Tyre the secret of the lead mines of Cornwall; their admiral Hamilcar, of the famed Barca family, had sailed south to modern Sierra Leone and Dakar; and their long galleys, patrolling the Straits of Gibraltar, had been outwitted only the once, so far as records remain to prove, by the Massilian sea captain Pytheas who circumnavigated the British Isles, and looked in awe on Iceland.

Carthaginian Exploitation

Carthage was proud, Carthage was economically predatory, Carthage was ambitious. In its ancient family of Barca, it possessed a continuing source of high ability, devoted to the service of the state. Its government, however, was

racked with jealousies among the leading plutocratic families, its demos had no rights, its armies were mercenary, and its colonial possessions were held and exploited for the benefit of Carthage alone.

Rome, on the other hand, its greatness still hidden in the future, was a small, hardy, struggling republic, but newly won to dominance over Italy itself. Even there, in the valley of the Po, the Cisalpine Gauls, hardy settlers from the invasions of 180 years before, were too newly subdued by methods necessarily harsh to appreciate the gifts Roman citizenship eventually would bring.

Roman Citizenship

Somehow, surely pragmatically, hardly by design, the Romans in the expansion of their dominion over Italy had followed certain principles which in the struggle with Carthage were to bring eventual success. Here and there through the territory, colonies of Roman citizens were planted, convenient safety valves for already serious population pressures within the seven hills, admirable garrisons in troubled foreign soil. These *colonii* retained their full Roman citizenship. Other cities, recognizing the inevitable, had made alliance with Rome and were welcomed into the confederation of Italian cities. To them, eventually, Roman citizenship would be extended. The cities and the tribes who had resisted, the Etruscans and the Samnites, vanished from the pages of history.

Roman Loyalty

There must have been in this hard, forceful expansion the seeds of a rough decency. It is doubtful that lofty ethical standards, divorced from practicality, much influenced the conduct of the Romans toward the territories they first conquered, then with reluctance, remained to govern. It is more likely that a clear-sighted empiricism, not unrelated to the costs of war, actuated their arrangements.

Whatever the reasons, whatever the process, it is a fact that during the crucial years of the Carthaginian invasion of Italy the Italian cities did remain loyal, did remain unswerving in their allegiance. Perhaps it was fear of retribution, foreknowledge of the savage retribution that was visited on recreant Capua after Cannae. If so, it merely reinforces the supposition that the Romans were practical first, and ethical only if ethics and practice went hand in glove to the same ends, or if the ethical approach promised the greater economy.

Here was the fact that upset the calculations and plans, invalidated the strategic concept of the greatest tactician of ancient times. Here was the political situation which defeated Hannibal, when no Roman army could be put into the field against him with any hope of victory.

In our modern parlance, we may advance the supposition that he was badly briefed by his political G2.

Hannibal

Even in the hoary retrospect of twenty-one centuries, a savor of virile if enigmatic romance surrounds the name of Hannibal Barca, scourge of Rome.

We know him only through the writings of his enemies. Therefore, we know him not too well. On the other hand, we are spared the panegyrics of professional apologists, who even then could be found for a pittance.

A judgment is possible; a judgment to be rendered with an eye to the probable. We know the bare outline of the things he did. We know that militarily they do not make a consistent pattern.

Consistency is a virtue not necessarily found in genius; and of Hannibal's genius in the field of tactics we have abundant evidence.

Perhaps it is fairer to say that we

know, not that his acts were inconsistent in pattern, but that they contained one glaring inconsistency, one fatal error in judgment disastrous alike to his cause, his city, and eventually to his life.

This error was not tactical, but strategic.

Hannibal reversed the English boast, in that he won every battle but the last.

The major facts are not in dispute. Inheriting the supreme Carthaginian command in Spain from his brother-in-law Hasdrubal in 221 B. C., he deliberately provoked the Second Punic War by assaulting and capturing Rome's ally, Saguntum, south of the Ebro in Spain. He crossed the Pyrenees, moved through southern Gaul, evaded at the Rhone River a Roman army sent to intercept him, crossed the Alps, and in 218 B. C. debouched into the Po Valley. In doing so, he committed the major crime of a responsible general officer. He cut himself off from his base of supplies with no adequate prospect of relief.

To be sure, he had before him in the even then ancient history of 130 odd years before the awesome example of Alexander, who had done exactly the same thing and, for his lifetime at least, got away with it.

Strategic Differences

In our safe and judicious retrospect, we see the basic differences in the situations facing the two commanders. We do not know that Hannibal appreciated those differences, and their certain effect upon the issue. Rather we know positively, by inference, that he did not so appreciate them.

The differences were in the field of strategy; and strategy is never far removed from politics. Indeed, one may go so far as to say that a strategic concept which fails to take accurate account of pertinent political factors is a strategy of defeat.

Alexander with his 40,000 Macedonians invaded an empire made up of heterogeneous elements, widely diversified in language, racial background, and customs, with no shred of patriotic fervor or vigorous nationalism to unite them. The armies of Darius were conscript armies not caring greatly to whom they owed allegiance since one master could give no more surcease from poverty or tyranny than another. Hannibal, on the other hand, invaded a country tied together by the confederation of Italian cities, fortified at strategic points by Roman colonies, like those at Cremona and Placentia, a country in which the rewards of peaceful intercourse, even under Roman duress, were beginning to wipe out the memory of parochial conquest.

In the field of tactics, Hannibal was as far advanced over Alexander as is Hodges over Grant. We can well enough imagine him studying the Macedonian's campaigns, and wondering at the secret of success achieved where so many risks were run in lieu of forethought.

In allowing Scipio's army to cut his line of supply to Spain, Hannibal must have known not one replacement, not one spear head, not one sheaf of arrows, not one brazen helmet, or suit of body armor, or elephant, or basket of grain would come to him from Spain through that alert and ruthless barrier.

He must have known that with the loss of Carthaginian domination of the Mediterranean sea lanes in the First Punic War all hope of aid from the mother city in Africa was also unfounded. These things he knew. He had to know them.

Yet, knowing them, he made the decision to invade Italy. One consideration, and one only, could have made that decision sound. If he could live off the country, if by his depredations he could intimidate the cities not willing to join him out of hatred for Rome, if he could

replace his battle losses by recruits burning with a desire to bring Rome to her knees, then he could win.

Once his presence in Italy was known, the Romans moved vigorously to make contact. Armies hastily raised and outfitted moved north at the swinging, mile-eating pace of the legions to meet and defeat the impudent invader. Long accustomed to victory, they had no thought of defeat.

At the Trebbia, a tributary of the Po, in 218 B. C., Hannibal met the first of these armies and nearly destroyed it. A year later, at Lake Trasimene, he ambushed and destroyed a pursuing Roman army. By completely competent maneuvering, well mixed with guile, he succeeded, in the period following Trasimene, in evading the best efforts of the Romans to pin him down and swung into southeast Italy, seizing the Roman supply base at the town of Cannae. There on a hill site across the Aufidus, he went into fortified camp while the Roman consuls of the year, Paullus and Varro, brought up still another army.

Paullus was a disciple of Fabius Maximus, called Cunctator (the Delayer). He favored slow attrition, avoidance of pitched battle with the fearsome Carthaginians, and patience. Varro, an utter incompetent of the loud-mouthed sort who seem to find public life to their liking, was eager to test his mettle against the might of Hannibal. On his day of command, he went out and met him, confident of the victory that his two for one superiority seemed to promise.

Some 50,000 Romans died that day on the field; 20,000 escaped to carry the overwhelming terror of their tidings back to Rome.

It is hard for us to imagine the situation of the young republic. Save for the troops retained in defense of the capital, Rome could muster no forces fit to meet Hannibal in the field. Outside the city walls, the Carthaginian army was the unchallenged master of Italy.

To paraphrase Mr. Churchill, it was Rome's finest hour.

All the determination and fortitude of the people rose in one mighty, indomitable urge to resist to the last. Patrician and pleb united in determination. If there were voices of dissentient weakness, if there were incipient quislings in the mob, their voices do not come down to us through the writings of Roman historians.

It is difficult to believe that Hannibal, by the time of Cannae, was not thoroughly disillusioned in his hopes for aid from the Italian cities. It is difficult to believe that so brilliant a master of the art of war did not then realize the inevitable consequence.

Two Conflicting Powers

The essential fact seems clear. The Mediterranean eucomene of the late second century before Christ, containing within it all the sources of the civilization we have come to call Western, was the arena of a conflict between two great powers as vital in its nature, and as entirely beyond compromise in its ideology, as that which now hangs over the entire planet. Then, as now, one side had to win. Then as now, one side had to lose. If the day of final reckoning was long delayed after the events recited here, let it be set down to the frequently unrecognized leniency of Rome, a reluctantly imperial people, and not to any reasonable expectation of compromise.

If there be for our times any lesson in this ancient struggle, so replete with drama and import for the world to follow, it rests in the fact that victory—lasting and certain victory—came at last to the side which, knowing or not, had practiced political virtues in relation to its own people and its neighbors—enlightened by comparison with those of defeated, and finally obliterated, Carthage.

Surely it is true that the problems of our times are complex. Yet the complexity has a pattern, a pattern somewhere repeated, a pattern which at least one philosopher-historian of the Punic Wars, Polybius, might well find awesomely familiar.

Cannae is not listed among the decisive battles of the world in Creasy's famous volume. That honor, for the time of the Punic Wars, he reserves for the Metaurus, fought 9 years later in 207 B. C., when Hannibal's brother, Hasdrubal, was defeated in north Italy while attempting to reinforce, belatedly, the victor of Cannae.

End of a Dream

But Cannae was the high tide of Carthaginian power and glory. For Hannibal, Cannae was a rude awakening to the enormous strategic error committed in embarking upon the invasion itself. In the limited response of Capua and a few other allies of Rome, he found no such wholesale defection as he required to make his undefeated army and his cause secure.

To a general of Hannibal's proved capacity, there could be no more shattering defeat than a victory as barren of consequence as it was overwhelming in appearance.

Cannae, for Hannibal, was the end of a dream.

For the Romans, it was the beginning of greatness; of a greatness founded long before in the stoic devotion to duty, unwavering love of country, high integrity, and rock-like continuity of policy which combined in Roman character and political institutions to prepare them for their then so far unique role in history; the establishment of a universal state, a universal peace, throughout the eucomene of the Mediterranean.

Nations at times exhibit much the same behavior as do individuals. Some men—perhaps, most men—faced with utter disaster, go down before it. Other men, the few, find disaster merely the trigger releasing theretofore untouched, perhaps even unimagined, inner resources. In trouble, in conflict, or in defeat, they seem to draw new strength and new determination from the most outrageous arrows of fortune, rising with each new blow to greater and greater heights of indomitability.

So it was with Rome.

Rome Rises

It is difficult to reconstruct, with adequate understanding, her situation when the news of Cannae, and some portent of its probable consequence, reached the city. For nearly a month, terror was epidemic in the capital city, with every day bringing news of defections which made it look as if Hannibal's fantastic gamble was about to pay off.

Some of the most ancient of the Greek settlements of southern Italy—Metapontum, Crotona, and Locri, with the tribes of Samnites, Lucanians, and others—one by one joined Capua, then the second city in Italy, in declaring for Hannibal. Overseas, Philip V of Macedon allied himself with Hannibal and declared war on Rome—a piece of cynical opportunism, repeated in our own generation by Fascist Italy, with similar ultimate consequence.

Even the pusillanimous government of Carthage itself recognized the victory sufficiently to vote minor reinforcements and supplies to Hannibal.

In Rome itself timorous counsel was not wanting, until Scipio, a survivor of Cannae, shamed them to silence.

On the other hand, Latium, Umbria, Etruria, and the Roman colonies of the north stood firm and unshaken, possibly because Hannibal was in the south. Hiero II, the greatest power in Sicily, stood by his treaty of alliance with Rome. However, after his death, his heir went over to Carthage.

But slowly it became apparent that

Hannibal's newly won allies could furnish little in the way of real help. Slowly the Roman spirit reasserted itself, the terror died down, and courageous counsel began to get a hearing—not, however, until the Senate, in its panic, had reverted to a near forgotten ancient custom and had sacrificed, by live burial, two Gauls and two Greeks to propitiate the obviously angered Gods.

A comparable situation could be imagined in which the United States were invaded by an army invincible in the field, which had just defeated the third and last field army we were able to raise against it; a situation in which some nations of the hemisphere, balancing nicely until the third and apparently overwhelming victory of the invaders, had fallen over each other climbing on the band wagon; and in which only the staunchest of our neighbors did not despair.

We can hope that, the panic over, we would answer as did Rome. Fruitful causes of civic discord—the farmers against the city population, the plebs against the ruling class—were set aside and forgotten in common danger.

Taxes, already confiscatory, were raised still further, and even then citizens flooded the treasury with free gifts of coin and precious metal. Universal conscription brought every male who could walk into the army, which was further augmented by slaves, promised manumission in return for service. The army as a whole, veterans and conscripts alike, refused pay for the period of the emergency. Man, woman, and child, slave and free, citizen and alien and ally, all united to save Rome.

Unable, for the paucity of his forces, to lay siege to Rome, Hannibal retired to Capua and into winter quarters. Toynbee observes that his army, spending that winter in enjoyment of all the vice that rich and decadent Capua had to offer, was thereafter unfit for service in the field.

This seems oversimplification, although modern medical knowledge might ascribe considerable debilitation of the army to such conditions. Actually, men tire of vice as they tire of inaction. There exists little reason for believing Hannibal could not control his men sufficiently to keep the majority in fighting trim.

Since from 216 B. C., when Cannae was fought, to 204 B. C., when he embarked his army for the defense of Carthage, no Roman army dared attack him in the field, it would also appear that Toynbee's facile generalization was not shared by those Roman contemporaries of Hannibal who alone could have put it to the test.

Rome's Offensive

In the 5 years following Cannae the Romans raised 25 new legions (approximately 200,000 men) and trained and equipped them for combat. Before part of this new army, Hannibal retired to the south; whereupon the Romans laid siege to Capua and were not decoyed into raising it by Hannibal's celebrated raid in force to the gates of Rome. Other Roman armies moved to Sicily, where in 212 B. C. Marcellus took Syracuse and, a year later, Agrigentum. In 211 B. C., Capua fell, and disappeared from the pages of history.

Still other Roman armies under the two elder Scipios were sent to Spain, where Hannibal's younger brother, Hasdrubal, not only maintained Carthaginian domination over the wealthy area, but was preparing to come to the aid of his brother in Italy. Both the Scipios were killed in battle, and Scipio the younger, son of one and nephew of the other, was sent to replace them. Younger even than the still young Hannibal, he took over with a firm hand, and although Hasdrubal avoided him and crossed the Pyrenees on his way to Italy, within a few years, he had reduced Spain to the status of a Roman province.

Hasdrubal made his way across the

Pyrenees, across Gaul, and across the Alps, following in Hannibal's footsteps. He descended into the valley of the Po, and there, on the banks of the Metaurus, a minor tributary, was defeated and killed in the battle which Creasy, on superficial grounds, names as decisive.

Two years later, the young Scipio, with the enormous prestige of his Spanish conquests behind him, was able to gather enough political strength to persuade the still cautious Senate to permit him to undertake a campaign in Africa, thus carrying the war to the enemy homeland.

There he found no such condition of political loyalty as Hannibal had found in Italy. Rebellious vassals of a too omnivorous Carthage came eagerly to his banners.

The pusillanimous government of Carthage—apparently anxious to forget, if it ever realized, how its policy of much too little and far too late had wrecked whatever small chance Hannibal might have had in Italy—recalled him in a panic to its defense.

At Zama, near Carthage, he was utterly defeated in 203 B. C.

Yet it was a near thing—at least as near a thing as Wellington said of Waterloo. Only the high command abilities of Scipio, who was capable of learning from his enemy, coupled with substantial superiority in the quality of his men, won the day.

Rome's Victory

On the advice of Hannibal, who knew when he was licked, Carthage signed a peace made generous by that curious, because so little understood, leniency and magnanimous patience which appear again and again in the affairs of the Roman Republic.

In spite of everything, Rome had not yet learned that where a defeated enemy possesses powers of recuperation, it is not enough to sign a peace treaty and go back home; it is necessary to stay and govern, until, in the fullness of time, the once enemy territories are fit to be incorporated in fellow citizenship.

Only so, in the verdict of history, has peace, under recognized law, under accepted enforcing authority, been established.

Humbled Carthage turned to Hannibal in defeat. After 7 years of turmoil, corruption, and outright fraud in its government, he was elected *shofete*. His actions proved that he had learned politics and statesmanship from Rome, as Scipio had learned tactics from him. He democratized the constitution, drastically revised the methods theretofore employed in exploiting what possessions were left, and so managed and encouraged trade and commerce, in combination with honest and frugal government, that he was able by 188 B. C. to pay in full the Roman indemnity of 10,000 talents (about 36 million dollars in gold equivalence and many times that in purchasing power).

This signal proof of the political advantages of honesty and public probity was too much for the corrupt oligarchy.

They managed to plant in Rome the rumor that Hannibal was planning a new war. The Senate, overriding the indignant and scornful Scipio, demanded his surrender.

Hannibal escaped, became an exile wandering from one court to another, aiding Antiochus the Great against Rome, before being hunted to suicide by grim Roman emissaries in Bithynia, at the age of 63.

The once powerful city that so rewarded him survived but another 38 years. In 146 B. C., Carthage was destroyed, disappearing like its former ally, Capua, from history, and Africa became a Roman province.

The same year saw the destruction of Corinth in Greece. Brought to the Balkan Peninsula by the actions of Philip V of Macedon and his allies of the Achaean

League, Rome again, represented by its consul Flamininus, had acted at first with great magnanimity. With all Greece at his mercy, he took the occasion of the Isthmian games to declare the cities formerly subject to Philip free, each to run its own affairs under its own government, each to be free of tribute.

"So mighty a burst of cheering arose," says Polybius of the incredulous reception given his announcement, "that those who listen to the tale today cannot easily conceive what it was." The next day, Flamininus withdrew his legions from the liberated cities.

But the turbulent Greek cities were not so easily impressed with a generosity which was synonymous, to them, with weakness.

Hardly had the upright, aristocratic consul departed than some among the cities started negotiations with Antiochus III, heir to the empire of the Seleucids, centering about Antioch. Other principalities of Asia Minor, fearing Antiochus, appealed to Rome. With Hannibal on his staff, advising him, Antiochus declared war. Again young Scipio, now older, took the field, and defeated Antiochus at Magnesia.

Like Flamininus, still unconvinced of the initial need for harsh measures, he contented himself with merely extending Roman protection over the states that had appealed for aid, before returning to Rome.

Surely never until the United States rose to world power was a nation seen again so reluctant to accept the meaning of conquest.

At the same time, this extraordinary magnanimity, patience, and forbearance of the best representatives of the Roman Republic was preparing the way for the peace to come.

Long after the brutalities of ultimate conquest were forgotten, men remembered the patience and the leniency, fortified in the thought, perhaps, both by the unprofitable nature of resistance, on the one hand, and the generally just and honest Roman rule, on the other.

Centuries were to pass before luxury, wealth, and corruption destroyed the integrity of the pro-consuls sent out to govern Rome's new dominions. In the interim, the secure basis of a world citizenship was laid, and loyalty to a common ideal replaced repression and governance from afar.

A Lesson Learned

But these developments were still in the future, so long does history take to make its lessons clear. The Greek cities again revolted, under the leadership of Corinth. This time Roman patience and forbearance, so long misinterpreted, was nearly exhausted. In 171 B. C., Perseus, son of Philip V, joined with the dissident Greeks, and was defeated at Pydna by Aemilius Paullus, son of the consul who fell at Cannae.

This time the retribution was more stern. Rhodes, until then a leader in the commercial life of the eastern Mediterranean, lost all her possessions off the island, and a competitive port was underwritten at Delos. A thousand Greek leaders of the sentiment against Rome were gathered up and taken as hostages to Italy; among them the philosopher-historian Polybius, without whose pen we might know much less of the times.

But even this lesson was not enough. At the height of the Third Punic War, the Achaean League declared war on Rome. When the Roman legions, under Mummius arrived, they were in no mood for argument. Corinth fell in the same year as Carthage to the west. All its male citizens were slain, its women and children sold into slavery, its portable wealth, the accumulation of brilliant centuries, carried off to Rome, and Greece and Macedon were made into a Roman province.

Peace, that the Greek cities had not

been able to encompass for themselves, came at last at the hands of an organizing, administering, outsider.

With Corinth and Carthage gone, Rome stood without effective enemies throughout the eucomene. The expansion, once started, had to continue, for beyond the pacified was always another recalcitrant, willing to test a foreordained destiny.

Rome had received more from Carthage than the wealth of Spain and of Africa, more from Corinth than the control of the eastern Mediterranean.

Pax Romana

In the process of governing the captured territories, and building on the stoic philosophy and devotion to the state of its own citizens, Rome soon developed an unexcelled group of administrators, civil servants, diplomats, and experts in controlling subject populations.

Roads followed the legions, and in turn carried the legions farther and faster. Roman coinage spread across the Mediterranean, driving out bad or discredited money, paving the way for Roman banking and credit to revivify industry and agriculture in the conquered lands. This process was carried on without the doubts encompassing us today, for being in Roman hands, or at least in Roman control, there was no fear that developed wealth and industry would be used against her.

Slowly an integrated society developed on the fading memories of conquest. Slowly the eucomene was united at first brutally, at not too great an interval magnanimously, and the Roman franchise, making the conquered the peers of the conquerors, was extended with extraordinary rapidity.

Ultimately, the day arrived when the proud wearer of the toga could travel from Eboracum (the modern York), in north England, to ancient Babylon on the Tigris; and from the cataracts of the upper Nile to the Rhine and the Danube, without passports, with but one kind of money, almost without guards, so all protective was his Roman citizenship.

The *Pax Romana* lasted nearly 300 years. The world has not since seen its like, nor, unless the lesson of Rome proved faulty, can a world peace be expected until one government, maintaining the law against all violators, becomes again dominant over the affairs of all men who can get at each other.

A nation, again like individuals, needs from time to time to be called by adversity to its heritage. How it meets such a challenge, when and if it comes, appears to set both the stage and the purpose behind its later greatness or futility.

Rome, tried to the utmost fiber of character after Cannae, emerged victorious, more over herself than over Hannibal, and was never thereafter halted until the passing of the centuries brought corruption and decay to the body politic, weakening it until the problems of the expanding eucomene, newly in contact with north and east Europe, proved too much to meet.

Surely here again is a thought for our times, expressed by Polybius:

> . . . There are two ways by which men can reform themselves, the one through their own mischances, the second through those of others; of these, the former is the more impressive, the latter the less hurtful.

Commonwealth versus United States Field Artillery

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THE purpose of this article is to acquaint commanders and staff officers of all allied armies with the two systems of field artillery which one can expect to encounter at the present time in the United Nations fighting forces. In view of the close relationship between allied armies in Europe and Korea, it is not unusual to expect an assignment which will require a knowledge of the field artillery of another army.

An explanation of the following terms is considered necessary to ensure a clear understanding of the subjects discussed herein:

Field artillery.—In the Commonwealth armies, "field artillery" denotes 25-pounder units only. These guns are normally found in units employed in direct support of the infantry brigades. In the United States Army, "field artillery" is a general term applicable to all types and calibers other than antiaircraft artillery and coast artillery. The Commonwealth term "field branch artillery" and the United States term "field artillery" have essentially the same meaning.

Light artillery.—In the Commonwealth armies, "light artillery" or "light regiments" refers to 4.2-inch mortar units; whereas in the United States Army "light artillery" includes 105-mm howitzers and cannon of smaller caliber.

Medium and heavy artillery have essentially the same meaning in both armies.

Super heavy artillery in the Commonwealth armies is the same as *very heavy artillery* in the United States Army.

Counterbombardment in the Commonwealth armies and *counterbattery* in the United States Army have the same meaning.

The Commonwealth corps *locating regiment* and division *locating battery* are employed to perform the same functions as the United States *field artillery observation battalion.*

The Infantry Division

Figure 1 indicates the echelons of command in each infantry division artillery.

Each organization contains 72 guns. The Commonwealth artillery is organized into 3 regiments of 24 guns each. This provides one regiment for direct support of each infantry brigade. All three regiments are "field" artillery. The 72 guns in the United States artillery are organized into 4 battalions of 18 guns each. Three battalions are "light" artillery (105-mm howitzer) normally employed in direct support of the three infantry regiments and one battalion is medium artillery (155-mm howitzer) employed in support of the division as a whole.

Each regiment of the Commonwealth

There are no major differences in the organization and employment of Commonwealth and United States field artilleries. Both have been tailored to fit the over-all organization of the armies which they serve

artillery is organized into three batteries, each battery having two troops of four guns each. The United States battalions are organized into three batteries of six guns each.

It is noted that no medium artillery is organic to the Commonwealth division; however, it is normal for a medium regiment from an AGRA (Army Group Royal Artillery) to be allotted to the division when committed.

Location of the Command Group

Normally, the employment of the various elements of division artillery is not of particular interest to the staff officer or commander of another nation. However, the doctrine pertaining to the location of the command group varies enough to merit comparison. In this connection, an article written by a Canadian artillery officer entitled "Employment of Commonwealth and United States Field Artillery," which appeared in the September 1952 issue of the MILITARY REVIEW, considered the organization for the forward control of fire to be the most controversial point between the United States and Commonwealth systems. The point given the greatest consideration in the article was the fact that the United States Army uses junior officers *forward* whereas the Commonwealth system employs junior officers to perform the duties around the gun positions and to perform survey and technical work, while the senior officers live and work with the supported units.

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Let us examine this matter in more detail—keeping in mind two factors which make it necessary to have different systems. One factor is the number of artillery headquarters in each division compared with the number of infantry headquarters. The other factor is the location of the fire direction center or, as we think of it in the United States artillery, the installation where fire direction is centralized.

In considering the first factor, we find that the Commonwealth organization has three artillery command echelons below the division artillery headquarters compared with two in the United States system. This provides an artillery commander (regimental) for each infantry brigade command post and an artillery commander (battery) for each infantry battalion command post.

In the United States system, the artillery battalion commander is responsible for working with the infantry regimental commander as well as with the three infantry battalion commanders. Inasmuch as the artillery commander is not able to be present at more than one place, he is provided with liaison officers for each of the headquarters. Their job is to remain with the infantry commander at all times as the representative of the artillery commander, to advise the infantry commander on artillery matters.

The artillery commander frequently visits the infantry regimental and battalion commanders but normally is present at regiment to participate personally in planning prearranged (predicted) fires.

Fire Direction Center

When we consider the location of the fire direction center, we see again that different systems are required.

In the Commonwealth artillery, the troop is the firing unit. The artillery troop commander is charged with advising the supported infantry company commander

as to the number of rounds to be placed on a target. This is one reason why it is normal to find the troop commanders as forward observation officers (FOOs).

Looking at the system employed by the United States artillery, we find that the battalion is the firing unit and that the artillery battalion commander is charged with allocating the number of rounds to be fired on a target. This procedure precludes tying the artillery commander to any particular infantry commander. In normal operations, all requests for artillery fire go to the battalion fire direction center where the decision is made as to the number of rounds to be fired and the designation of batteries to fire. All computation of firing data is accomplished at the artillery battalion and is sent directly to the gun positions.

Battery personnel also are trained and equipped to operate their own fire direction center when required to do so and each battery maintains a firing chart similar to the one at the battalion fire direction center.

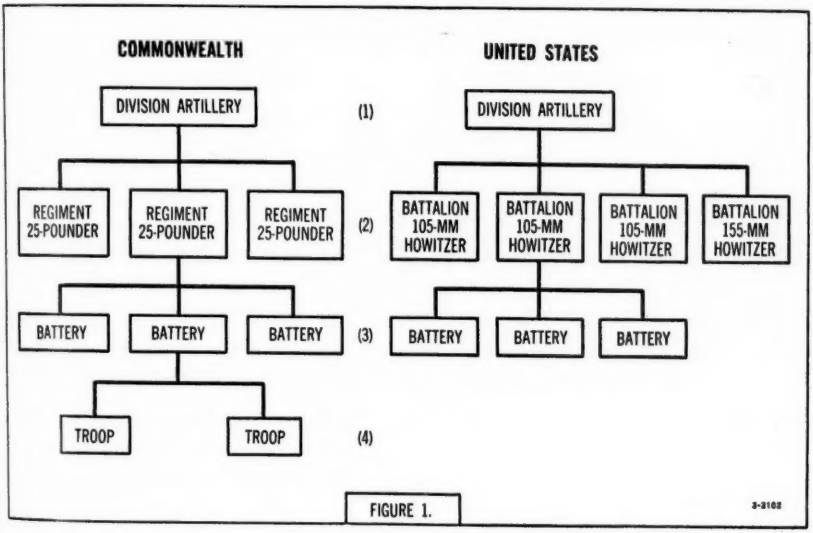

FIGURE 1.

Forward Observation

In connection with the control of fire, it is considered appropriate to note the number of forward observers available in each organization. This refers only to personnel whose *primary* job is the adjustment of artillery fire, because, in both armies, we maintain that adjustment of artillery fire is *not* limited to artillerymen, but that all combat personnel, particularly officers and noncommissioned officers, must be trained to adjust artillery fire.

The United States system provides for a forward observer for each infantry company and requires the observer to remain with his company at all times—whether in the line or in reserve. The Commonwealth organization provides for two FOOs for each infantry battalion (four companies) for normal operations and they are not tied to any particular company. When a battalion has some special mission, the FOOs and the normal gun support can be supplemented at the direction of the artillery regimental commander, who is

at brigade headquarters. Considering the tactics employed by the enemy we are fighting now and an army we may expect to fight in the future, there is an advantage in having a forward observer with each infantry company at all times.

In addition to having an individual with each infantry company whose *primary* job is the adjustment of artillery fire, it provides for a separate communications channel, through the artillery liaison officer, from each infantry company to the artillery fire direction center.

Armored Division Artillery

The field artillery in the United States armored division is organized essentially the same as the infantry division artillery. The Commonwealth armored division has only two organic regiments while a third regiment is held by an AGRA and is allotted only when additional artillery is required. This procedure results from the fact that tank fire power is available and that a regiment of artillery occupies too much road space to have it march with the division unless a specific need exists. In this connection, it is interesting to note that, based on experience obtained during World War II, the United States added one battalion of artillery (medium self-propelled) to its armored division.

Airborne Division Artillery

The Commonwealth airborne division has two regiments whereas the United States airborne division retains the four battalion organization. However, the same number of guns are present in each organization since the United States battalions have only 12 guns (batteries have 4 guns instead of 6).

Corps Artillery

Figure 2 shows the echelons of corps artillery in the United States and Commonwealth armies.

In both armies the senior artillery officer in the corps is both artillery commander and special staff officer. In either army they perform the same functions as staff officer—adviser to the corps commander on artillery matters—however, there is a significant difference in the scope of command.

The Commander Corps Royal Artillery (CCRA) commands all artillery which can be positioned so as to play a useful part on the corps front as a whole. In deliberate operations this may include (1) AGRAs which can cover more than one divisional front; (2) artillery of divisions not actively engaged; and (3) artillery of divisions engaged when it can give support on the fronts of adjacent divisions.

When command is centralized at the corps artillery level, the CCRA is authorized by the corps commander to issue to all subordinate artillery commanders the tactical and technical orders necessary to implement the corps plan. The initiation and issue of these orders is the sole function of command which he exercises in respect to artillery other than the artillery organic to the corps. He is not directly responsible for the administration of AGRAs or division artilleries, which continues through normal channels and comes under the corps headquarters Q (administrative) staff. However, as senior artillery commander of the corps, he is interested in all the administrative problems of subordinate units and provides, with his staff, an additional channel for bringing such problems to the attention of the corps staff.

In addition to the organic troops, the United States corps artillery commander commands the artillery groups and separate battalions which are attached to the corps (similar to CCRA commanding AGRAs). The United States system does *not* provide for command of division artillery by corps artillery commanders. Instructions for the division artillery are issued to the division commander in the name of the corps commander. However, this does

not prevent the corps artillery commander and his staff from working directly with division artillery on all matters pertaining to artillery. The planning for employment of division artillery is conducted on an informal basis by commanders and staff officers of the corps and division artilleries and confirmed by orders issued in the name of the corps and division commanders.

Discussion of organization will be limited to the two top echelons in each army as indicated in Figure 2. The organization of the lower echelons is essentially the same as indicated for division artillery.

UNITED STATES		*COMMONWEALTH*
Corps Artillery Headquarters and Headquarters Battery	(1)	Headquarters Corps Artillery
Field Artillery Group Headquarters	(2)	Headquarters Army Group Royal Artillery
Battalion *	(3)	Regiment
Battery	(4)	Battery
	(5)	Troop

*One or more battalions may be attached to and function directly under the corps artillery headquarters.

FIGURE 2.

At headquarters corps artillery we find the CCRA and a small staff to assist him in his command functions which are primarily tactical. This headquarters is located at or near the corps headquarters.

The corps locating regiment is organic to the corps artillery and provides survey data for use by all units of the corps artillery and for the divisional locating batteries. It also locates enemy guns and mortars by use of radar, sound ranging, and flash spotting.

The corps counterbombardment troop is also a separate unit organic to corps artillery. Its functions include provision of information about the enemy, with particular reference to the location, strength, and identity of enemy weapons; and the furnishing of this information to the intelligence staffs of own, higher, lower, and adjacent commands. The counterbombardment troop also directs the fires of the corps artillery on the enemy weapons. Sources of information include the corps locating regiment, the division locating batteries, the Royal Air Force, shelling and mortaring reports, and intelligence staffs.

The AGRA is commanded by a brigadier and, like the United States field artillery group, is army artillery allotted (attached) to corps. AGRAs consist of a variable number of medium and heavy regiments, and may also include field or super heavy regiments. The field regiments (25-pounder) are usually affiliated with armored divisions, or with independent armored or infantry brigades, and are included in AGRAs primarily for administration and training. One headquarters AGRA is allotted for each five, or part of five, regiments, the minimum being one for each corps. A corps with two infantry divisions may have an AGRA consisting of four medium regiments and one heavy regiment. This provides for medium regiments on the basis of two for each infantry division and provides a heavy regiment for support of the corps as a whole.

Like the Commonwealth commander, the United States corps artillery commander wears two hats. He commands corps artillery and is adviser to the corps commander on artillery matters. His rank is brigadier general. The corps artillery commander has the corps artillery headquarters and headquarters battery to assist him in accomplishing his dual mission. This organization contains the corps artillery staff, fire direction and counterbattery operations, and communication facilities. It should be noted that fire direction in the United States system is centralized at the corps artillery headquarters, and that fire direction and counterbattery operations are always located together.

The field artillery observation battalion is a separate unit organic to corps artillery. It performs functions similar to those of the Commonwealth corps locating regiment.

In view of the fact that the corps artillery commander cannot remain at the corps command post for extended periods of time and command corps artillery properly, he is provided with an assistant corps artillery officer and an executive (both officers are colonels). The assistant corps artillery officer remains at the corps command post to advise the corps commander in the absence of the artillery commander. Part or all of the corps artillery staff may be located at the corps headquarters since the organization permits any arrangement that the artillery commander desires to employ. The executive assists in commanding corps artillery and is found with the bulk of the headquarters and headquarters battery in a location which is convenient to the division artilleries and to firing units of corps artillery. This portion of the organization is commonly referred to as the corps artillery fire direction center.

The field artillery group is commanded by a colonel and is very similar, both in organization and employment, to an AGRA. The group headquarters and battalions are army artillery which has been attached to the corps. A group headquarters can control from two to six battalions—four being considered normal.

With minor augmentation for counterbattery work, a group fire direction center can function as an additional corps artillery fire direction center. Situations which are favorable to operating in this manner are wide corps fronts and independent operations conducted by reinforced divisions or by task forces. These group fire direction centers also serve as alternate corps artillery fire direction centers in the event the corps artillery fire direction center is rendered inoperable by enemy action.

Administration of Corps Artillery

From a purely administrative standpoint, the Commonwealth system appears to have some advantages over the United States system. The Commonwealth corps headquarters is organized to perform both tactical and administrative functions. Therefore, the administration of all nondivisional artillery (AGRAs) is performed by the corps staff. Each AGRA has a direct administrative channel to the corps headquarters. The CCRA does not enter into the administration of AGRAs, except that, as senior artillery commander of the corps, he is interested in all the administrative problems of subordinate units and provides, with his staff, an additional channel for bringing such problems to the attention of the corps staff.

In the United States system, the nondivisional artillery attached to corps is administered by army headquarters. This results from the fact that the corps headquarters is primarily tactical. The army headquarters is too far away both organizationally and geographically to permit it to function properly as the administrative headquarters for units located as far forward as corps artillery. However, this disadvantage is more apparent than

real, since the corps artillery commander with his small administrative staff is in a position to ensure that the administrative requirements of attached units are properly fulfilled. Insofar as the tactical situation permits, the corps artillery commander, as well as the army commander, keeps the same units grouped together.

A discussion of the organization and functioning of the United States fire support co-ordination center (FSCC) has been omitted until this time because it does not have a counterpart in the Commonwealth organization. However, the Commonwealth command group is ideally located to function in the same manner as the FSCC.

Fire support co-ordination is not a new procedure or technique. The principles of fire support co-ordination have existed for many years, but only recently have they been set forth in Department of the Army publications.

A fire support co-ordination center is an operating agency of the supported or force commander established and operated by the fire support co-ordinator, who is the artillery commander (officer) at the echelon concerned. FSCCs are established at infantry (armored) battalion, infantry regiment or combat command, division, and corps command posts. The FSCC is located within or immediately adjacent to the command post of the unit supported. Ideally, it is located in the immediate vicinity of the G2-G3 (S2-S3) operation room or similar establishment.

Medium and heavy artillery have the same meaning in both the United States and Commonwealth armies. Above, two 155-mm long toms, a heavy artillery piece, firing in Korea.

The FSCC continually makes detailed plans and co-ordinates and integrates the several fire support means in accordance with the desires of the supported or force commander. It functions as the commanders focal point for target intelligence; however, this function does not serve to alter the functions and responsibilities of the unit intelligence officer. The FSCC advises the commander as to the most ef-

ficient and effective employment of available fire support means. It prepares the fire support plan of the echelon concerned and co-ordinates the fire plans of subordinate units in accordance with the over-all plan of maneuver.

The fire direction centers may be located with their respective FSCCs when such location does not detract from the primary requirement of being located to best control the fires of subordinate units.

Field Army Artillery

There is only one difference in the Commonwealth and the United States artillery at army echelon that is worthy of consideration. In the Commonwealth system, there is a direct chain of command from the army artillery commander to the division artillery commander. In the United States system, orders are issued in the name of, and as authorized by, the army commander.

Summary

The organic division artillery in each system contains the same number of guns; however, all guns of the Commonwealth divisions are field (25-pounder), whereas one-fourth of the United States guns are medium caliber. Medium artillery support is obtained in the Commonwealth system by attaching a regiment from an AGRA when the division is committed.

There is a direct chain of command from the army artillery commander to the division artillery commander in the Commonwealth system, whereas in the United States system orders are issued in the name of the army and corps commanders.

There is one less echelon of command in both the United States division and corps artilleries. The troop is the fire unit in the Commonwealth artillery while the battalion is the fire unit in the United States system. Similarly, the AGRA is the highest echelon in the Commonwealth corps artillery which operates a fire direction center compared with the United States corps artillery fire direction center being located at corps artillery headquarters.

In the Commonwealth system, two forward observation officers are normally available for each infantry battalion. In the United States system, a forward observer is available for each infantry company and remains with his company at all times—whether in the line or in reserve.

The Commonwealth does not have a separate element comparable with the United States fire support co-ordination center. However, the normal location of the artillery commanders during combat is suited to functioning in the same manner as the United States FSCC.

The administration of nondivisional artillery attached to a Commonwealth corps is performed by the Commonwealth corps headquarters, which is both tactical and administrative. The United States corps headquarters is primarily tactical; therefore, the field army headquarters is the next higher administrative headquarters for nondivisional artillery attached to the United States corps.

Conclusion

From the foregoing, it appears that there are no major basic differences in the organization and employment of elements of the Commonwealth and United States field artilleries. Each system has been tailored to fit into the over-all organization of the army and has proved to be satisfactory for performing its basic mission of supporting the infantry (armored) forces.

The Soviet Trial by Arms

June to December 1941

Doctor Raymond L. Garthoff

The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.

This article appears as an appendix in the forthcoming book SOVIET MILITARY DOCTRINE, *by Raymond L. Garthoff, to be published soon by The Free Press, Glencoe, Illinois.—The Editor.*

THE discrepancy between the forces of the invader and the defender on 22 June 1941 was impressive, and quantitative consideration surely favored the Red Army. The German High Command, knowingly attacking a numerically superior foe, discounted weight of numbers just as the Soviet High Command overestimated it.

To understand the story of the first phase of the war, it is necessary to look briefly at the aims and strategy of the German High Command.

Operation 'Barbarossa'

Although Hitler announced his decision to destroy "Russia" in a conference on 31 July 1940, the first and main directive for Operation *Barbarossa* (Directive No. 21, Top Secret) appeared on 18 December 1940. This plan served to implement Hitler's strategy of infantry frontal break-through exploited by *blitzkrieg* armored enveloping forces, creating inner (infantry) and outer (armored) enveloping pincers, culminating in the annihilation of the Soviet armed forces-in-being, and permitting easy occupation of the European areas of the Soviet Union. The directive states:

> The German Armed Forces must be prepared *to crush Soviet Russia in a quick campaign* (Operation *Barbarossa*) even before the conclusion of the war against England. . . . The mass of the Russian Army in Western Russia is to be destroyed in daring operations, by driving forward deep armored wedges, and the retreat of units capable of combat into the vastness of Russian territory is to be prevented.
>
> In quick pursuit a line is then to be reached from which the Russian Air Force will no longer be able to attack German *Reich* territory. The ultimate objective of the operation is to establish a defense line against Asiatic Russia from a line running approximately from the Volga River to Archangel. Then, in case of necessity, the last industrial area left to Russia in the Urals can be eliminated by the *Luftwaffe*.
>
> In the course of these operations the Russian Baltic Sea Fleet will quickly lose its bases and thus will no longer be able to fight.
>
> Effective intervention by the Russian Air Force is to be prevented by powerful blows at the very beginning of the operation.

Hitler's estimate was that this could be accomplished in 3 months. And, indeed, 3 months after the invasion, the German press chief, Dietrich, artlessly made public a report from the *Führer's* headquar-

Many factors brought about the early Soviet reverses—German surprise, obsolescent equipment, and unpreparedness—however, the major factor was insufficient planning and training for defense

ters stating: "The campaign in the East is ended!" Even earlier, on 3 July, Chief of Staff Halder wrote in his diary: "It is probably no exaggeration to say that the campaign against Russia has been won in 2 weeks!" Kleist has since admitted that, "Everything was based on the idea of decisive result before autumn."

Underestimated Soviet Forces

The German High Command was certainly audacious (if not "adventuristic," as the Soviets claim) in attacking an enemy of known great numerical superiority in men and material. To a certain, perhaps crucial, extent this was due to an underestimation of Soviet forces. Halder wrote on 10 August:

> The whole situation makes it increasingly clear that we have underestimated the Russian Colossus, which consistently prepared for war with that utterly ruthless determination so characteristic of totalitarian states. . . . At the onset of the war we reckoned with about 200 enemy divisions; now we have already counted 360 . . . if we smash a dozen of them, the Russians simply put up another dozen. The time factor favors them. . . .

On the same day he added, "Our last reserves have been committed," and, "What we are now doing is the last desperate attempt to prevent our front line from becoming frozen in positional warfare. . . ."

Comparative Strength

The Germans knew they would have numerically inferior forces. Even in February 1941, when planning for Operation *Barbarossa* was begun in operational detail, the German High Command estimated the opposing forces would be 155 Soviet and 121 German divisions.

By 4 April, Halder noted the need to raise estimates of the Russian Army, "as the Finns and Japanese have urged," to 171 infantry and 36 cavalry divisions, and 40 motor-mechanized brigades. On 21 June, he recorded the final official German estimate: 141 German divisions, including 19 armored divisions (but not including 5 German divisions in Finland), opposing 213 Soviet divisions, including 37 motor-mechanized brigades.

On 22 June 1941, 166 Axis divisions (of which 146, including 19 *panzer*, were German) attacked from the Barents to the Black Sea. The Soviets claim that the German invading force was 170 divisions (sometimes raised to 170 German and 61 satellite divisions); Stalin told Hopkins that it was 175 divisions total, a figure not greatly exaggerating the actual strength. The Soviet force countering the invasion numbered between 180 and 188 divisions in the West at the time of the blow, of which about 118 were along the frontier, plus 55 to 60 tank brigades.

By August, the Soviet force totaled 260 divisions, and declined thereafter for a few months because the extremely heavy losses exceeded greatly the Siberian forces rushed to the defense of Moscow.

There is no doubt that tactical and operational surprise was achieved. General Halder's diary for the early days of the war clearly points this out. He wrote, on 22 June, the first day's reports:

> Tactical surprise of the enemy has apparently been achieved all along the entire line . . . Army Group Center reports Russian command organization in complete confusion . . . The enemy was surprised by the German attack. His forces were not in tactical disposition for defense. . . .
>
> [And on June 23:] I very much doubt that the enemy high command really has unified and organized control of the situation. It rather looks as if the local withdrawal movements both of the ground forces and the Air Force are being carried out under the pressure of our advances, and that it is impossible at this time to speak of a planned withdrawal.

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On 24 June he noted that still "there are no signs of an operational withdrawal of the enemy" and that "the Russians had adapted their [prewar] plans to an all-out defensive near the border" (inferred from the unusually large stores of matériel captured). On 25 June he wrote that "the Russians have accepted the great border battle," and on 1 July, "There is no reason to believe the Soviets ever made a long-range decision to withdraw. The enemy is just being forced back by us." On 8 July he added:

> The enemy is no longer in a position to organize a continuous front, even behind strong terrain features. At the moment the apparent plan of the Red Army High Command is to check the German advance as far to the west as possible by draining our strength with incessant counterattacking with all available reserves. In pursuing this policy they evidently have grossly overestimated German losses.

However, by 23 July Hitler's insistence on small tactical encirclements caused Halder to declare that "these arguments mark the beginning of the decline of our initial strategy of imaginative operations," and Hitler's refusal in the following days to heed the advice of Halder and others that Moscow was the crucial objective troubled these German generals greatly.

Soviet Losses

The German armies very nearly succeeded in their objective—cutting off and reducing vast armies in the initial 4 months of the war. In the Bialystok-Minsk area, 320,000 prisoners, 3,332 tanks, and 1,809 guns were taken; in the Orsha-Vitebsk-Smolensk pocket, 310,000 prisoners, 3,200 tanks, and 3,200 guns were taken; in the Uman pocket, 150,000 prisoners were taken; in the Kiev pocket, 665,000 prisoners, 886 tanks, and 3,718 guns were taken; and finally in the Briansk-Viazma operations another 660,000 prisoners and thousands of weapons were taken. In all, the Soviets suffered more than 3 million casualties, including loss of more than 2 million prisoners, in the first 4 months of the war.

Yet it is not correct to infer, as many have done, that these vast numbers of prisoners were taken because of widespread voluntary surrender by Red Army men. Indeed, the striking thing is that under the circumstances the Red Army fought as stubbornly as it did. Again Halder's diary provides some interesting information. On the first day of the war, 22 June, he noted that, "After the first shock, the enemy has turned to fight." On 23 June, he wrote, "The stubborn resistance of individual Russian units is remarkable. Bunker crews have blown themselves up with their bunkers, rather than surrender." A passage on 28 June indicates that the Russian soldier did not desert at the first opportunity; he wrote, "What strikes one in all these battles is the singularly small number of prisoners compared with the large booty. . . ." And on the next day, 24 June, he wrote, "Reports from all fronts confirm previous indications that the Soviets are fighting to the last man. Now, for once, our troops are compelled by the stubborn Russian resistance to fight according to their combat manuals." Many such statements could be cited; on 4 July he reported, "very tough fighting"; on 11 July, "[the enemy] is fighting with fanaticism and dogged determination"; on 15 July, "The Russian troops, now as ever, are fighting with savage determination and with enormous human sacrifice"; on 20 July, "The enemy pockets in our rear are still a most vexing problem"; on 23 July, "Savage counterattacks . . . Over-all picture: Enemy defense is becoming more aggressive. . . ."; and on 7 August he noted that, "The enemy elements surrounded at Kiev by our Seventeenth Army are fighting desperately." In fact, according to General Blumentritt, the Russians "repeatedly held on long

enough to be encircled," being *overly* tenacious in their defense.

This strong Soviet resistance was an important factor in upsetting initial German plans. The Germans counted heavily on popular dissatisfaction in the Soviet Union. Kleist reports that, "Hopes of victory were largely built on the prospect that the invasion would produce a political upheaval in Russia."

Disaffection was there, but the Germans overestimated its effectiveness in reducing military capability, and they failed to see that the Russian people, while opposed to the Soviet regime, were ready to die for their motherland, and preferred a native tyrant to a foreign one.

'Foreign Conquerors'

German deportment likewise augmented this feeling that the Germans were more foreign conquerors than liberators. While not meeting the optimum expectation of Soviet doctrine on morale and the support of the rear, in most cases the Soviet citizens did *not* actively co-operate against the Soviet regime. Mass surrenders in the early months followed encirclement, isolation, and bewilderment, in which lack of a positive desire to defend the regime was important; but in the later months of 1941 and 1942, although the Soviets were also in retreat, they fought stubbornly and well, not because they came to love their regime more, but because their command lines were clear, and later because reports of German atrocities, real and fictitious, filtered back through the lines from occupied areas.

Air Losses

Most astounding is the differential in matériel and arms between the opposing forces, and the tremendous losses suffered by the Red Army. The Soviet Air Force numbered over 10,000 combat aircraft at the time of the invasion. In the first 2½ months of war, more than 8,000 planes were lost, and by the end of the year the Soviet Air Force numbered only 2,500 operational combat planes.

During this period German losses were almost negligible. German advance estimates were again very low. In February 1941, Soviet air strength was officially estimated by the Germans at 1,600 to 2,000 bombers and 3,000 to 4,050 fighters. A few hours after the war commenced, on 22 June, General Halder noted, "Air Force reports of 800 enemy aircraft destroyed . . . our own losses so far—10 aircraft," and later the same day, "Air Force reports 850 enemy aircraft shot down. This includes entire bomber squadrons committed without fighter support, which were taken on and destroyed in the air by our fighters." By 24 June, he wrote, "The enemy Air Force is completely out of the picture after the very high initial losses (reports speak of 2,000)." On 26 June, he reported Russian air strength as estimated at 1,900 aircraft. On 30 June, he reported 200 enemy aircraft shot down in that one day. Yet, on 1 July, he wrote:

> The Air Force has greatly underestimated the numerical strength of the enemy. It is quite evident that the Russians initially had far more than 8,000 planes. Half of this number probably has already been shot down or destroyed on the ground, so that numerically we now are about equal with the Russians. But Russian flying efficiency cannot nearly compare with ours, owing to the poor training of their pilots and crews, and that is why entire enemy squadrons, or large parts of them, get shot down so often in combat, as for instance happened yesterday over Dvinsk and Bobruisk.

Former Soviet Air Force officers now in the West have also described the tremendous losses of the first months. Former Major General Alexei Markoff has reported such losses, and told how Lieutenant General Kopets committed suicide on the second day of the war because of 600 aircraft lost on his front, with only nominal loss to the enemy. He also indicated the lack of preparation for defensive operations, and even for the offensive war plan:

With a wing of long-range bombers under my command, I was told to follow the useless "invasion of Germany" plan; opening the sealed orders containing our war tasks, I learned for the first time that these planes were expected to fly 600 miles after dark, and bomb German factories. Yet most of the crews had barely begun to study night flying. I ordered the bomber commander to choose the best 18 plane crews, and sent them off after dusk, fearing what would happen. The results of this flight were ghastly. Two bombers were wrecked in accidents, 5 more made forced landings, 6 returned to our airdrome without finding the target, and only 5 of the 18 fulfilled the mission.

We have seen Halder's reports of the destruction of entire bomber squadrons committed without escort. Losses on the ground were also great. Colonel Kotov has stated that his airfield, 140 miles from the border, was raided 12 times in the early days of the war, with 30 percent of the aircraft lost on the ground and another 30 percent in the air.

Pirogov has also described the heavy losses on the ground. As a result many trained airmen were assigned to the infantry for lack of aircraft. Pirogov says that there were 2,000 trained airmen in a grounded reserve at Kazan. In a rather unusual statement, for American consumption, the chief Soviet Air Force correspondent during the war, Lieutenant Colonel (now Colonel) N. Denisov, admitted that in the early months of the war: "Soviet fliers lived through harassing times of initial losses. Many pilots lost their machines during the enemy bombing of aerodromes before they had time to take to the air." Yet the *Luftwaffe* used but 1,300 to 3,000 aircraft in the Eastern campaign.

Tank Losses

The tale of Soviet tank loss is even more striking. Against 24,000 Soviet tanks (mostly obsolescent), the Germans threw but 2,434 tanks; for instance, Von Kleist had only 600 tanks opposing Budenny's 2,400; and yet 3 months after the invasion the Soviets are estimated to have lost 17,500 tanks, to German losses of 550 tanks.

It would, however, be incorrect not to note the effect of German losses on the campaign; although very considerably lower, they were relatively significant. General Halder's diary again indicated this very well. The matériel and weapons reserves of the German Army were extraordinarily meager. On 2 July, Halder noted that German tank replacements totaled 80, with 105 additional expected from current production by 15 July and the same number by 30 July. Thus, apparently, German tank production was at that time only 210 tanks a month; a fantastically low production for the purpose of all-out war. On 19 August, General Buhle reported to Halder that in Army Group South only 60 percent of their tanks were operational and that the artillery could no longer keep up with the advance. On 24 August, General Buhle reported, "Decline of combat strength in infantry divisions on an average 40 percent, and in armored divisions 50 percent." The next day, Halder wrote, concerning the escape of considerable enemy forces from the encirclement at Velikie Luki, "The trouble is that our armored divisions now have such a low combat strength that they just do not have the men to seal off any sizable areas." On 14 September, Armored Group 2 reported an average of 25 percent of its tanks operational. By 24 January 1942, General Buhle was forced to report, "As of May, we shall thus be stripped of *all* tank reserves."

The aircraft situation was little better. As we have noted, the initial ratio was about five to one in favor of the Soviet Air Force. Despite the enormous Soviet losses, Halder stated on 12 September that the Soviet air strength was 1,710 operational aircraft (not including training planes and factory reserves) opposed to 995 *Luftwaffe* aircraft.

Rail transport was seriously weakened by December. On 4 December, Halder wrote that there were only 10 (instead of the necessary 16) maintenance men for each kilometer of rail (of whom only 1 out of 10 was German). On 14 December Army Group North reported, "Train arrivals have dropped to an alarming low." By 17 January 1942, Halder wrote, "The situation on our railroads is well-nigh disastrous."

Weather

The late autumn mud and early severe winter proved valuable Soviet allies. In October, Halder noted that "the entire pursuit operation following the twin battle of Briansk-Viazma has been mired down in bad fall weather" and that Army Group Center was "stuck in the mud." By 27 December, he noted that on this front "the situation [is] aggravated by deep snow." On 3 January, he wrote that, "The plain truth is that with the temperature down to 30 degrees below freezing our troops simply cannot hold out any longer."

German Casualties

Relative to the high Soviet casualties (mostly prisoners), the German Army suffered little, but in terms of its available forces and reserves it was hard hit. The first month of war ended with a total of 21,301 casualties. By 31 December, casualties totaled 830,403 or 26 percent of the Army in the East, including 173,722 dead. At the end of 1 year of war with the USSR, casualties totaled 1,300,000 men or more than 40 percent of the Army in the East (3.2 million average strength), including 271,612 dead. As early as 21 November 1941, Halder wrote, "My old 7th Infantry Division appears to have suffered heavy losses. Regiments with 400 rifles are commanded by first lieutenants!" This was no isolated case; on 30 November, General Buhle reported to Halder that there was a shortage of 340,000 men, that is, 50 percent of the infantry combat strength; that company strengths were down to 50 to 60 men; and that there were only 33,000 men in the zone of interior (Germany). Perhaps most important was the false impression created by the relatively gross Soviet losses. On 6 December 1941, Halder complained that Hitler, "cannot be bothered with strength ratios. To him the prisoner of war figures are conclusive proof of our superiority."

These factors, and the Soviet tenacity of fighting despite vast encirclements and tremendous losses of men and matériel, were not completely lost on the German generals. On 17 August, Halder reports Von Leeb as presenting "a very gloomy picture . . . the troops are exhausted." On 3 December, Von Bock reported to him that "the moment cannot be foreseen when the troops will be at the end of their strength." On 19 December, Von Kluge reported that "the troops are apathetic; the situation is very unhealthy." And in postwar annotations to his diary, General Halder said of 15 January 1942 that it was:

> . . . Probably one of the gloomiest days of that winter. The commanders in chief [of the army groups] about that time were almost unanimous in their desire to abandon the Russian front and fall back to the Government General [of Poland]. Darkest pessimism was intensified by a book on the retreat from Russia in 1812 by General Caulincourt. . . . Its circulation was finally prohibited.

This brief survey of German difficulties explains, at least in part, the German failure to win, and thus the ultimate Soviet ability to turn the tide. It does not, however, mitigate or explain the causes of the striking Soviet unpreparedness and great early reverses and losses.

Soviet Unpreparedness

In view of the clear Bolshevik insistence on vigilance and preparedness, this complete and almost disastrous unexpected

blow is especially surprising. It serves to remind us that the Soviet leadership does not always fulfill its own operational requirements or achieve its intended result. It seems safe to assume that this experience of gross failure to prepare for a possible attack is taken very much to counsel, and hence it is quite unlikely that the Soviets would permit such a circumstance to arise a second time. Their aggressive attitude and policy is partly caused by this fear of losing the initiative and being surprised once again; as well as, of course, by their will to advance wherever possible.

The diplomatic scene of June 1941 was of such a tense character that the Soviets should, on general principles, have been more on their guard than proved to be the case. However, the Soviet unpreparedness is even more perplexing when it is realized that there had been at least three specific warnings, including two from separate intelligence espionage rings abroad, communicating the exact date of attack and the size of the invading force, respectively 1 month and 2 weeks in advance. Churchill also sent a specific warning to Stalin on 19 April 1941, however, in answer to Churchill's question later as to why this warning was not heeded, Stalin replied, "I thought I might gain another 6 months or so."

A ranking former Soviet staff officer has told the author that intelligence reports on the German troop movements and border concentration were excellent. The Germans, in fact, moved more than 100 divisions in the 4 months preceding the assault, with the only "cover" explanation being the rather incredible idea that this was a feint to deceive the British.

There are signs that this threat was not entirely ignored. Airfield construction in the new western area was stepped up, and partial mobilization carried on. According to the German General von Tippelskirch, the Soviets declared a state of readiness in the west on 10 April 1941.

In 1940, three special military districts were created in the west (with headquarters in Riga, Minsk, and Kiev), as the basis for front (army group) commands in wartime. However, the transition from the 1940 to the 1941 mobilization plan was incomplete when the German attack was launched, and the resultant confusion indicates that the possibility of a German offensive in the spring or summer of 1941 was not recognized. Similarly, the secret Red Army training program for the summer of 1941 contained no provision (even alternatively) for war in that period. Mobilization and training were being effected, but not for war in the spring or summer of 1941. According to former Soviet soldiers and officers, no special preparations for a possible German invasion were made in the political education classes.

It is not clear, on the basis of materials currently available, whether the Soviets were intending to initiate hostilities themselves in the autumn of 1941 or in 1942. Various German sources, notably in the trials at Nuremburg, have advanced this claim. It is, in part, supported by the statements of several Soviet generals captured by the Germans during the war, including Lieutenant General Vlasov, but none of these sources claimed to know any specific war plans or timetable of attack. It is quite likely that the Soviet leadership was prepared to attack Germany under certain conditions—precisely what those circumstances were or would have been is not known.

Soviet Military Doctrine

Soviet military doctrine was not entirely tested in 1941 because of several severe departures from it in practice; especially the failure to be prepared for the not unlikely contingency of war with Germany.

Some tenets of Soviet doctrine were so strongly held that the effect was very negative. Foremost among these was the excessive preoccupation with the offensive prior to the outbreak of hostilities, and corollarily, insufficient planning for defense. Soviet training was almost entirely in offensive operations.

Another serious error caused by this tenet was the excessive concentration of the Red Army, its Air Force, and its supply dumps near the frontier areas, thus augmenting the great losses of men and matériel by the successful *panzer* penetrations. This was based on a serious miscalculation of the location and quantity of reserves needed; although it was the successful use of reserves later which did halt the tide in November and December at Moscow, Tikhvin, and Rostov.

Supplementing these errors, the Soviet requirement that withdrawal could only be carried out with explicit orders from above led many Soviet divisions and even armies to a premature demise. Higher command was frequently "lost"; some commissars were too zealous and others too lax in dealing with the commander's need for initiative, and the command was in no position to permit withdrawal in a fluid situation. The Soviet command structure was virtually shattered; commanders frequently did not know the location either of their own or the enemy troops.

Despite the postwar propaganda claims, and later effective wartime use of defense in depth, the retreat of the early months of the war was not originally planned and executed as "active defense in depth." According to former Major General Alexei Markoff, a high Soviet Air Force commander at the outbreak of the war:

> There were no reserve echelons backing up the front-line troops, because *defense in depth was waved aside* as sheer nonsense. *No defensive war plans were made or even contemplated. Giant supply depots were filled* to bursting with arms, ammunition, and fuel not in the safe rear, *but so close to the frontier as to be within range of Nazi heavy artillery.*

The one exception to this rule was the deployment in the Baltic states, where there was apparently no intention to defend the lightly guarded forward area west of Riga, Shialulian, Kaunas, and Vilna. This buffer was inadequate.

Other Considerations

In addition to these doctrinal influences, some advantageous and some disadvantageous to the Soviet leadership, certain technical and tactical shortcomings were important. The Red Army in June 1941 was undergoing four important changes: redeployment, retraining, revising the divisional formation, and re-equipping with new tanks and aircraft.

Redeployment

Redeployment was basically effected prior to the German assault, but the concentration of most of the Red Army in the newly annexed parts of Poland, Rumania, and the Baltic states was purchased at the cost of stripping the "Stalin Line" of its defense garrisons, without the creation of a new permanent defense line farther west. We have noted that the German attack came at a period of transition from one mobilization plan to another.

Training

Training in 1940-41 strongly stressed small unit (sub-division) action, because of the weakness of this level shown in the Finnish-Russian War. However, the increased mobilization of early 1941 thus introduced many formations not trained in co-ordinated action, independent command, or large-scale maneuver.

At the time of the German attack, the Army division was in the process of reorganization with a new table of organization of 14,500 men instead of the former 18,800. (Actual strengths were well be-

low the table of organization, and under pressure of war, the table of organization was changed to about 10,000 men.)

Obsolescent Equipment

Finally, most of the basic Soviet aircraft types and standard tanks were either obsolescent or obsolete. Although new types were already appearing (the *T34* and *KV I* medium and heavy tanks; *Yak* and *MiG* fighter aircraft, and *Il-2*, *Pe-2*, and *Tu-2* bombers), they were not available in operational quantities in June 1941, nor were their operators trained. This was even admitted by the Soviets; Lieutenant Colonel Denisov wrote, "[The Germans] chose the moment [for attack] when the Soviet Air Force was partly in the process of re-equipment and had not yet mastered all new types of machines." New Soviet aircraft were in a number of instances even shot down by their own troops, because the silhouettes were unknown. The prevalence of obsolescent weapons contributes to an explanation of the almost incredible Soviet losses of tanks and aircraft noted before.

Summary

In summary, the main causes of the Soviet reverses of June to December 1941 were:

1. Failure of the Soviet leadership to follow their own doctrine of preparedness for all contingencies and permanent alert for possible war.

2. Operational and tactical surprise and the negative momentum of unco-ordinated and unplanned retreat.

3. The frontier deployment of massed Soviet forces with inadequate mobile operational reserves.

4. The failure of doctrine to provide intelligent withdrawal provisions or a strategic plan for defense in depth.

5. The failure of Soviet military authorities to provide adequate tactical defensive training.

6. The early breakdown of the communications and command network.

7. Qualitative technical inferiority of tanks and aircraft.

8. The greater combat experience of the German invasion force.

A perusal of available military and civilian publications, during the past 3 months, indicates that material from the MILITARY REVIEW was reprinted in the following countries:

Argentina	Denmark	Ireland	Spain
Australia	Dominican Republic	Mexico	Switzerland
Belgium	El Salvador	Norway	The Netherlands
Brazil	France	Pakistan	Uruguay
Canada	Honduras	Portugal	Yugoslavia
Colombia			

The Editor

Inside the Infantry Division

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The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

DURING the last week of November 1950, elements of the 7th Infantry Division were stretched from Hyesanjin on the Yalu River to the Changjin Reservoir. On the map this distance measures roughly 80 miles. On 27 November, the Chinese launched an offensive designed to decimate the X Corps. With the entire United Nations offensive stalled, the forward elements of the corps were ordered to withdraw nearly 60 miles to the south down precipitous mountain trails. In many instances the enemy had cut the routes of withdrawal. Faced with this situation, the Commanding General, 7th Infantry Division, was able to control his unit, and withdraw to the coast without serious incident despite the overwhelming numerical superiority of the enemy and the great distances over which his unit was dispersed. How could such an amazing feat be performed in the face of the overwhelming numerical superiority of the enemy? The superior organization of our infantry division with its flexibility, mobility, and great fire power combined with its superior communications and logistic support made it possible.

Fire Power

There are those who intimate that our infantry division is not efficiently organized, especially when it is compared with similar units of our potential adversaries. It has been stated that too many personnel in our division are assigned duties other than the primary duty of shooting at the enemy. Numerous fire power comparisons have been made in an attempt to compare the United States infantry division with similar divisions of other armies. These theoretical comparisons are derived through the application of a fire power system developed by the Army for use by umpires during maneuvers, and, therefore, are applicable only to United States troops. This system cannot be used as a basis for gauging the killing power of the armies of various nations. Many factors other than the assignment of an arbitrary "point value" to a weapon must be considered. Conclusions drawn from applying the point system to foreign armies is similar to comparing oranges with apples.

Many arguments have been advanced deploring the apparent failure of the United States Army to develop fire power in its rifle battalions comparable with that which is assumed to be developed by other armies. The only way to judge the relative merits of the different systems is by results.

Our concept has been to use our superior equipment and technology to limit the cost of war in blood. War may cost us more in dollars, but each weapon or piece of equipment must meet the test of whether its added cost enables us to trade fewer of our lives for more of an enemy's. Reported battle casualties for both sides to date, both in World War II and in Korea, indicate that the balance is heavily in favor of our troops.

During World War II, fighting a common enemy, the Soviet armies mobilized 25 million men and suffered 6 million bat-

tle deaths, while the United States mobilized 15 million men and suffered 294,191 battle deaths. Our superior fire power enabled us to do this. We were able to keep the enemy down while we moved to destroy him.

Fire power is defined in military dictionaries as "the ability to deliver fire." This definition implies the need for men, ammunition, maintenance, target selection, accuracy, communications, ability to get the weapon to the proper place at the proper time, flexibility in order to shift fires, and observation to direct the fire.

Obviously all these functions cannot in all cases be performed by one individual because of the physical location of the weapon. The men to perform these functions must be organized into teams if we are to have co-ordinated action. These men must be properly clothed, fed, and equipped, and provisions must be made for their health and comfort. Integration of all these requirements into an organization is mandatory.

Historical Background

The United States Army has never been content to stand still. Between the two world wars, our progressive thinking leaders saw the need for a fast-moving division with shock action, mobility, and flexibility, and, in 1939, the triangular concept of organization was tested by the 2d Infantry Division. It eliminated excessive command channels and streamlined the organization of the division. It was not long before the need for this type of division was apparent.

The fast-moving German Army and its quick conquest of most of Europe in 1939 and 1940 emphasized the need for speed. The new triangular United States division with its sound organizational structure proved to be superior to the best the Germans and Japanese had to offer. With minor modifications, it readily adapted itself to operations all over the world. It has in the past and is presently demonstrating its inherent ability to sustain itself indefinitely in combat for extended periods.

To take the maximum advantage of the lessons learned in World War II, the Infantry Conference in 1946 reviewed the structure of the division, and considered the need for additional fire power. This conference resulted in some significant changes to the division, which have since proved their validity in combat in Korea.

Economic and Social Considerations

Any comparison of similar units of two armies is not valid unless the factors which influence the organizational structure of the two units are known. The organization of any unit must take cognizance of the national policies and the social and economic customs of the nation.

The organization of any nation's military units reflects the character and productive capacity of that nation. It has often been pointed out that the productive capacity of the United States is its real secret weapon. However, integrated with the sheer power to produce is the native ingenuity of the nation to create better and more effective means of accomplishing an end. These factors have a definite effect upon the organization of this nation's military strength. Thus, because we are a highly mechanized nation

The organization of the United States Army's infantry division is superior to divisions of other nations because of its mobility, fire power, flexibility, simplicity, and better communications and logistic support

and have developed intricate and effective means of communication and transportation, our military forces are able to avail themselves of these basic strengths. From the productive capacity and native ingenuity of our nation, the Army has developed an infantry division with great mobility, flexibility, superior killing power, and unexcelled communications.

Human Life and Welfare

In addition to purely military considerations which dictate the basic organization of our infantry division, the Army must take into consideration the concepts of human life and welfare which are traditional and fundamental concepts of the American national life and culture. It is social considerations of this type which require the Army to make provision in its organization for such supplementary functions as religious activities, mail service, adequate care for the sick and wounded, proper handling of the dead, maintenance of appropriate records concerning both the living and the dead, activities for maintenance of a high standard of morale, and many other miscellaneous functions.

The Army provides these services whenever it is possible without effecting its primary mission of defeating the enemy. The provision of these services is necessary because of the effect which the lack of any of them might have upon the soldier, his family, and his friends at home. Our national policies and social concepts demand that consideration be given to the provision of these services. Military necessity demands these considerations, since man is the fundamental and most important element in the infantry division. The capabilities and limitations of the human element materially effect the ability of the division to accomplish its mission.

General Bradley considered the effect of our national social and economic customs upon our soldiery so important that he cautioned the cadets at West Point:

> When we are working with Americans in uniform we must remember that the soldier and the sailor and the airman are not born in uniform. They come from civilian origins. Their natures are formed in civilian molds. The character of our civilian society will in a large degree determine the character of our fighting, which reflects the spirit of inventiveness and initiative that is America.

Tactical Considerations

There are many and varied tactical considerations which influence the organization of our infantry division. First of all and most important is the mission of the division—*to close with the enemy by fire and maneuver in order to capture or destroy him, or to repel his assault by fire or close combat.* This mission is general and specifies the ultimate result desired without limiting the commander to a specific means or method of accomplishing the mission. The co-ordinated and timely employment of the weapons in the division, in conjunction with the judicious employment of its service units, enables the commander to accomplish the desired results.

Mr. Frank Pace, while Secretary of the Army, cautioned that "the Army must be prepared for possible global war against an enemy who outnumbers us on the ground—an enemy capable of marshalling his resources to strike without warning at a time and a place of his own choosing. The Army can choose neither the time nor the place, nor the type of war to be fought. Ours must be a flexible

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plan of defense." The organization of the infantry division must reflect the need for this *flexibility*. It must be designed to fight anywhere, with long lines of communication, and under any conditions that circumstances may require.

It must be designed as a balanced force of the arms and services necessary for sustained combat.

The division's organization has been subject to constant changes over the years because of developments of new weapons and doctrines. The need for these changes is basic—modern wars cannot be fought with weapons and tactics of the Napoleonic era.

The division strives to attain the highest degree of self-sufficiency within its organization and from its own people. National policies dictate that the Army sustain itself from its own sources, and that liberated and conquered people be treated humanely in all areas that come under the control of the Army. Apart from the humane aspects in this policy is the consideration that this self-sufficiency lessens the calculated risks involved in carrying out a tactical operation, for a commander knows what he can expect in the way of logistical support.

The Army's tactical doctrine envisions a unit which can engage in sustained combat operations and incur minimum losses. Killing power is substituted for manpower. Our doctrine emphasizes maneuver; therefore, supporting weapons for the rifleman are included at the company level. By the addition of a minimum number of service personnel to the division, this killing power, used in lieu of manpower, can be sustained over great distances for extended periods.

The killing power of the division must include weapons to keep the enemy at a distance when the tactical situation so dictates. To provide for these requirements the organization of the infantry division contains weapons which can continually engage the enemy from a distance as great as 16,000 yards up to hand-to-hand combat. These weapons permit the engagement of all types of targets, even when they are in defilade, or under cover.

Warfare has changed considerably in the short history of our country. The "Minuteman" could drop his everyday task, pick up his rifle, and assume the task of defending his country. A gradual evolution in military organization has brought us from the less complex "Minuteman" organization, in which the rifle was the major weapon, to our modern organization with its complexity of weapons. Today's military organization must provide its commander an efficient fighting unit with mobility, flexibility, killing power, and simplicity; and control of a high order to ensure co-ordinated action rather than individual action, and communications geared to react faster than the mobility inherent in the unit.

Communications

While he was Secretary of the Army, Mr. Frank Pace visited a unit of the Seventh Army in Europe which was on maneuvers. As he and Lieutenant General Manton S. Eddy were visiting one of the front-line units, General Eddy stopped to talk to a platoon commander, and asked him where he was calling for artillery fire. The lieutenant pointed to a distant object. General Eddy then pointed to a grassy knoll about 500 yards distant and posed a situation to the platoon leader which would require him to call for artillery fire on this knoll. When the platoon commander answered that he would call for artillery fire on the knoll, General Eddy asked him to do it. As the lieutenant reached for his field phone and his map, senior officers moved in. General Eddy waved them away. There was an uncomfortable silence—one error might have laid the fire on the troops and the observers. However, they relied on the lieutenant and the safety officer,

and breathed a sigh of relief when the artillery landed on the knoll. This experience moved Secretary Pace to remark:

> To me this incident emphasized two things—one, the great reliance we place on a junior officer and his tremendous responsibility both in peace and war, and, two, the great value of communications. That the whole success of this mission might well have depended, along with hundreds of United States lives, on the accuracy and dependability of communications struck me with a powerful impact.

One means of communications which is 95 percent efficient is not enough. The 5 percent of the time it is out may come at a crucial moment, and the battle may be lost. Alternate means must be provided to ensure co-ordinated action of the combat elements of the division. The commander must be able to use his communications at all times if he is to control the fast-moving tank-infantry-artillery team. Lives can be lost because of inefficient communications.

Organization

The infantry division is the basic fighting unit of the army, and as such has been the target of considerable criticism and much praise.

It is the opinion of our military leaders that the division is organized efficiently to produce maximum results under average conditions of terrain and climate. Its organization is readily adaptable, with minimum changes, to operations in jungles, in the arctic, and over mountainous terrain.

The infantry division includes the minimum number of organic units with which it can be expected to engage in sustained combat. The shock action, mobility, flexibility, and sustaining power of the division are derived from the ability to combine the actions of its combat arms and services. It is the smallest United States unit that is composed of all ground arms and services which are essential to the successful conduct of ground operations.

The division is triangular in organization. All commanders, from the rifle platoon leader to the division commander, command a basic trinity of units. Each commander has a staff and a headquarters element to assist him—and fire support elements to assist his command. The triangular organization facilitates the tactical fundamentals of fixing the enemy, maneuvering against the enemy, and exploiting the success created.

The present infantry division contains 18,180 men. These men operate in three broad functional areas: assault, combat support, and service and administrative support. The assault units—the three infantry regiments, the tank battalion, and the reconnaissance company—comprise 65 percent of the total strength of the infantry division. The combat support units are the artillery battalions, engineer combat battalion, and signal company. The support elements are organized to facilitate a tactical grouping around the three infantry regiments. They represent 25 percent of the division strength. The service and administrative support units comprise only 10 percent of the division strength. The lack of effectiveness in any one of these elements produces an ineffective division.

Command Elements

To enable a commander to discharge his responsibilities, he is provided a staff to assist him in the exercise of command, and commanders for his subordinate units. Control of his unit is essential to command. In the days of slow-moving warfare, communications were limited to messengers and personal visits. The small amount of real estate involved and the numbers and types of weapons involved did not require more than primitive communications. In modern warfare, no commander can personally exercise command of more than a handful of men.

Could the commander of the 7th In-

fantry Division in Northern Korea during November 1950 have extracted his division by himself? The distances involved alone would have made it impossible without his staff, his communications, and his subordinate commanders.

To assist him in the exercise of command, a division commander is provided a headquarters and headquarters company of 348 men. These units contain the personnel for the command and staff elements essential for the proper supervision of the operations of the division. Staff personnel are included to perform the four functions of command—personnel, intelligence, operations, and supply.

Specially trained personnel are provided to furnish technical advice, to provide for 24-hour operations, to co-ordinate tactical air operations, to assist in military government and civil affairs, to pay the troops, to furnish legal advice, and to ensure proper public relations. Are 348 men excessive to control and administer 18,180 people? Measured in terms of the utilities and governing agencies of a city of 18,000 people it certainly cannot be considered so.

Combat Elements

The infantry, tank, and the reconnaissance units of the division represent the "teeth" of the division.

Continuous scrutiny of the table of organization and equipment of these units and the progressive thinking of our military leaders have increased the killing power of the present division by 75 percent in comparison with its World War II counterpart. This has been accomplished with less than a 20 percent increase in personnel.

The Infantry Regiment

The infantry regiment is the backbone of the division. The co-ordination of its movements and tactical actions with those of the other division units generates the shock action of the division. It is equipped, organized, and trained to use weapons of close combat, to support its assault weapons with heavier fires, and to provide limited administrative and logistical support for its units. In addition to its three infantry battalions, it contains a headquarters and headquarters company, a service company, a medical company, a tank company, and a heavy mortar company.

Headquarters and Headquarters Company

The infantry regiment contains 3,662 personnel. What do these people do? Are they necessary?

The regimental commander has a staff of 14 officers and 15 enlisted personnel to assist in the control of the regiment. The four essential functions of command are furnished by the inclusion of officers on the regimental staff for personnel, intelligence, operations, and supply functions. In addition, religious and information and education activities are provided for on his staff.

The headquarters and headquarters company contains a 78-man communications platoon which installs and operates the communications of the regiment which are essential to maintain control of the regiment and liaison with adjacent and higher headquarters. It installs and maintains communication to the infantry battalions but does not operate within the battalion area. This platoon operates 14 radios, installs, operates, and maintains all wire to subordinate units, receives and dispatches all incoming and outgoing messages and correspondence, encodes and decodes messages, and maintains all signal equipment within the regiment within its capabilities. These functions must be performed on a 24-hour basis.

A light aviation section of six men with one plane and one helicopter furnishes

the means for reconnaissance to the regimental commander.

The regimental headquarters and headquarters company contains small tactical units for which it is considered uneconomical to establish separate company headquarters. Maximum use of the company headquarters mess and administrative personnel is obtained by assigning these small tactical units to this company. The units thus included are:

1. A counterfire platoon of 21 men whose primary mission keeps it on the front line. With the use of its equipment this platoon locates enemy indirect fire weapons so that they may be destroyed. The enemy indirect fire weapons silenced by the information obtained by this platoon save many American lives and permits ease of maneuver for the regiment.

2. An intelligence and reconnaissance platoon of 34 men which gathers essential information on enemy positions, and gives timely warning to enable the regimental commander to take positive actions to counter enemy threats. This platoon constantly operates on or in front of our own front lines.

3. An antitank mine platoon of 31 specially trained men which lays mines as required and can, in an emergency, deactivate enemy mines.

4. A security platoon of 35 men which protects the command post from infiltration and guerrilla attacks. The men in this platoon are combat riflemen, and are equipped and ready to engage the enemy at all times.

The Service Company

To assist the commander in the administration, supply, and maintenance requirements of the regiment, a service company of 183 personnel is included. When it is considered that all food, clothing, ammunition, fuel, and equipment necessary to sustain the regiment; all personnel records for the living and the dead; proper care for the dead; mail service; and the maintenance of 168 vehicles and 119 trailers are furnished by this unit of 183 men, the efficiency of our regimental organization is evident.

The headquarters and headquarters company and the service company together represent approximately 12.5 percent of the regimental strength, a small percentage when the tremendous task of commanding, controlling, and supplying the regiment is considered.

A commander of any military unit influences the action of his subordinate units by the judicious use of his supporting arms, his reserve, and by personal influence. Our tactical military units are designed to give a commander a unit to find the enemy and fix him, a reserve to finish him, and the supporting arms to influence such actions whenever required.

The heavy mortar company and the tank company are the regimental commander's supporting units to be utilized to influence the action. These units have 12 mortars (4.2-inch) and 22 tanks to furnish support to the infantry battalions. It requires only 333 personnel or approximately 9 percent of the regimental strength to give the regimental commander these highly essential and destructive weapons.

The Infantry Battalion

The infantry battalion, with a total strength of 887 men, has a structure essentially the same as the regiment, except on a smaller scale. The battalion commander and his enlisted staff totals 19 people. When it is considered that the battalion commander must co-ordinate and control the varied weapons of this basic fighting unit over a wide area, this staff is not excessive. A total of 37 communication personnel assist him in exercising control of his battalion. In addition, he is furnished 27 men to assist in the handling of ammunition and provid-

ing minor pioneer work. Moreover, 8 intelligence scouts are furnished to provide information about the enemy which assists the commander in formulating his plans.

The infantry battalion is the basic tactical unit of infantry. Its mission is to close with and destroy the enemy by fire, maneuver, and shock action. It normally operates as a part of the infantry regiment.

The battalion is trained to enter combat on foot. Most people today consider mobility synonymous with vehicles. The mobility of the infantry battalion lies in its ability to "hand carry" all of its weapons cross-country. Vehicles cannot be used where this unit fights.

Individuals carry their own weapons; heavier weapons are carried by their crews—two or three men carry the weapon and the others carry ammunition.

The infantry battalion is equipped with a variety of weapons, including the M1 rifle, carbine, pistol, bayonet, automatic rifle, light and heavy machine guns, recoilless rifles, grenades, mortars, and rocket launchers. All of these weapons can be hand carried. The integration of the killing power of these weapons on the battlefield, to concentrate this "killing power" against the enemy, requires considerable time and effort.

What do the 887 men in the battalion do? A breakdown by primary military occupational specialty (MOS) shows that 740 are light or heavy weapons infantrymen, 37 are cooks, 44 are communications men, 10 are motor personnel, 14 perform administrative duties, 12 are supply personnel, and 30 handle ammunition and do pioneer work. All of these men are trained as infantry soldiers.

Are the functions provided by all the men of the battalion worth the manpower cost? To maintain the cross-country mobility of the battalion, and to enable the battalion to sustain itself, they are essential. Results in World War II and in Korea provide ample proof that the battalion organization is worth its cost in manpower.

The Tank Battalion

During World War II, one of the normal attachments to the infantry division was a tank battalion. The recommendation of the Infantry Conference included the assignment of a tank battalion to the division. The tank battalion follows the triangular organizational concept. It has a headquarters and service company, a medical detachment, and three tank companies. The 71 tanks in the battalion provide a substantial increase to the fire power and shock action of the division. This battalion of 688 men furnishes the division commander with the means to reinforce or assist the infantry regiments in the accomplishment of their missions. The tank battalion performs its own maintenance and resupply, and has its own signal communication. In addition, it performs maintenance on the tanks of the infantry regiment which is not within the capability of the infantry.

The Reconnaissance Company

The reconnaissance company of 169 men consists of a company headquarters and three reconnaissance platoons. It possesses the following characteristics: mobility, balanced fire power, light armor protection, and multiple means of communication. This company is a combat unit capable of performing reconnaissance, exploitation, pursuit, the seizing and holding critical terrain features for short periods, security missions, attacks against enemy lines of communication and supply installations, and delaying and harassing action. When reinforced it can engage in sustained combat. Although all units of the division are responsible for providing information, the reconnaissance company is given this function as its primary mission. Intelligence information is es-

sential to command because adequate intelligence facilitates the formulation of plans for combat operations.

Combat Support Elements

When large forces are dispersed over widely seperate areas, rapid signal communications must be provided. Command and the control essential to command in the present-day Army is only as good as the available communications.

A signal company of 371 personnel is provided to assist the commander in controlling and administering the division. This unit operates the complex and varied means of communications of the division.

Communications facilities are provided in this unit for the co-ordination of the tactical air when it operates in support of the division. The signal company is responsible for the installation, operation, and maintenance of all radios, telephones, and telegraph equipment of the division. The replacement of signal supplies and equipment is also the responsibility of the signal company. This unit must provide for the speedy transmission of orders, intelligence, logistical requirements, information, reports, and warnings. Specially trained personnel are required to operate and maintain the variety of equipment in this unit. Alternate means must also be available so the commander can influence the action at a critical time in case of a failure of normal signal means.

Division Artillery

The organization of the division artillery provides for the necessary command and staff functions; control, maximum mobility, and flexibility with the utmost simplicity. It has a headquarters and headquarters battery for division artillery, a medical detachment, four field artillery battalions, and one antiaircraft artillery automatic weapons battalion. Three of the field artillery battalions are direct support artillery, and the same battalion is normally placed in support of the same regiment. Full utilization of artillery is obtained by never placing it in reserve even though its companion regiment may be in reserve. The antiaircraft artillery automatic weapons battalion furnishes the necessary antiaircraft protection, and when not employed in its primary roles is often used in direct support of ground operations. The division artillery contains 3,541 personnel. They operate, maintain, and supply 136 primary weapons; maintain and operate numerous vehicles and trailers; provide front-line observation across the entire division front; and coordinate the actions of other attached and reinforcing artillery units.

Engineer Combat Battalion

Mobility is an essential characteristic of the infantry division. This mobility must be maintained to allow the division commander to shift his forces to meet a threat or to exploit an unexpected success. Utilization of this mobility to its maximum extent requires good roads free of mines and other obstacles, repair of bridges, and numerous other construction. In addition, the division requires an ample supply of water, technical assistance in river crossings, and other services. Efficient performance of these functions requires specially trained personnel who are proficient in the many special skills required. A battalion of 897 trained combat engineers performs these functions in support of the division. Its services are essential to the division. This battalion is capable of operating as infantry when required, and often does so.

Service Elements

The service elements of the division must provide food, fuel, clothing, ammunition, equipment, maintenance, evacuation, and many other services. These units

represent a little less than 11 percent of the total division strength. They normally do not shoot at the enemy, but they do furnish the supplies and equipment to keep the division attack rolling. What do these people do?

Medical Personnel

In the United States division, 1,097 personnel provide medical care. Our national policies and concern for the soldier's health and life, his family, and his friends preclude furnishing anything short of the best practical medical facilities. These people are primarily engaged in furnishing daily routine medical care for the soldier from the moment he is wounded until he is evacuated from the division area. They provide dental care and furnish logistical support for medical supply. They represent approximately 6 percent of the total division strength, a small percentage indeed for 18,180 men.

The Quartermaster Company

An Army must have food, fuel, clothing and other supplies. The division quartermaster company of 250 men is responsible for supplying the entire division with these items. In addition they provide bath and laundry facilities and graves registration service. These men are highly essential to the ability of the division to sustain itself in combat. A large portion of the 370 tons of supplies entering a division area daily are handled by this company, yet its strength represents only 1.3 percent of the division strength.

The Ordnance Battalion

The 3,811 vehicles and trailers, 149 tanks, and the many other weapons of the division must be mantained in an excellent manner to protect the divisions mobility, shock action, and killing power. An ordnance battalion of 332 men is responsible for this function. In addition, this battalion handles all ammunition and ordnance replacements for the division. This unit represents only 1.8 percent of the division strength.

The Division Band

A band may not be considered an essential part of a military organization, however, the 43-man band of the infantry division furnishes music for essential formations. In addition, it is an asset to the morale of the troops, and furnishes entertainment for the troops when the tactical situation permits. The band represents a very small fraction of the division strength.

The Military Police Company

Maintenance of traffic on roads to assure the freedom of the highways for the division when it must move quickly; control of traffic in the division area so that the enemy intelligence may be denied essential information; maintenance of proper safety on the highways in the division areas; and speedy evacuation of prisoners of war are all essential operations and contribute to the success of the division. To perform these functions, a military police company of 183 personnel is included in the division. Specially trained personnel in the company ensure proper treatment of prisoners of war under the Geneva convention, a national policy by which we are bound. If these functions were not provided for by inclusion of the military police company, the burden would fall on the combat units thereby depleting their fighting strength.

The Replacement Company

As an example of the high regard that the Army has for the individual is the orientation and indoctrination that the division replacement company is able to provide for all combat replacements arriving in the division area. This unit of 39 personnel is more than justified in processing men in and out of the division. The knowledge and indoctrination given to the new replacements while they are in this unit has saved many American lives.

All of these units are considered highly essential to the maintenance of control, supply, and other logistical support of the division. They represent less than 11 percent of the division strength. In addition, these units, except for the medical units, can and have had to fight in Korea and other places as infantry. With this small proportion of service elements the United States infantry division is able to sustain itself in combat for an indefinite period, despite the fact we have more vehicles, a wider variety of weapons, more complex equipment, and resupply ourselves solely from our resources.

Conclusions

By now it should be obvious why the Commanding General of the 7th Infantry Division was able to evacuate the division to the Hamhung beachhead as a unit.

The infantry division, with its tremendous and varied fire power and excellent communications, has performed many other such amazing accomplishments. It can fight under all conditions of terrain and climate. Its superior communications permit an unexcelled degree of internal cooperation. The division is capable of operating in combat for prolonged periods, and can integrate additional support in arms and services without affecting its flexibility or mobility. It contains the proper balance of the arms and services, and a simplicity of command structure which facilitates the application of great force against the enemy.

Is it inefficiently organized? How could it be, and accomplish such amazing feats in the face of tremendous odds and adverse weather conditions such as the 7th Infantry Division accomplished in the cold, bleak days of November 1950.

However, we cannot be content to stand still. Our experience in Korea has demonstrated a need for more killing power to cope with the dense tactical formations employed by the Communists. We have stopped them in Korea. We can stop them elsewhere with our present divisional structure.

Faced by the larger manpower reserves that our potential enemies possess, we must be prepared to reduce their numerical superiority by increased killing power.

The Army has taken steps in this direction, and at the same time reduced personnel requirements. In 1951, the Army eliminated 675 personnel spaces from the division without sacrificing killing power. These reductions were brought about by elimination of desirable but not essential personnel. In addition to this reduction, 541 personnel of the division have been converted from other assignments to man additional machine guns and recoilless rifles. This is not enough, we must continue to explore all areas with a view to reducing personnel requirements, without affecting our killing power. Improvements are possible, and continued efforts must be made to examine critically the existing structure in the light of current weapons and new developments and to increase both tactical and administrative efficiency.

Since the aim in combat has always been to hit your opponent with a decisive blow, and to strike that blow at the proper strategic moment, the acid test of effectiveness in weapons is their capability of accurate fire power and their mobility.

Major General Elbert L. Ford

The Morale of the Individual Soldier

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The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

HOW often people talk about morale! The generals compare the morale of their divisions, while the privates talk about it over their beer. But do we all really know what it is we are talking about? The term "morale" has become a sort of catch-all title used to label the overall outlook or attitude of this or that organization, or of some particular individual. This situation leaves a great deal to be desired.

Morale, at best, is a pretty slippery concept to pin down, because there is no universal agreement on its components. However, one point *is* generally agreed upon: the term "morale" is *most applicable* in the discussion of the attitudes or viewpoints of a *group*.

Our industrial personnel experts long ago concluded that another term was needed when discussing the morale of an individual, and they finally settled on "job satisfaction." This new term, a sort of first cousin to the original "morale," gave them a label to be attached to an individual's outlook or attitudes so that these could be discussed apart from the collective outlook or morale of the group to which he belonged. This new approach to the problem proved to be an extremely useful one. Many problems of low individual morale heretofore inexplicable fell apart when considered in terms of job satisfaction.

Perhaps this same approach would be useful in the Army. We seem to have devoted a lot of attention to group morale, yet we have seldom considered the effect of the individual's job satisfaction on its attainment. This is rather like putting the cart before the horse. If we can improve each individual's level of job satisfaction (each man's morale, if you will), the raising of the morale of the group will not be difficult—in fact, it will probably start improving without our doing anything else. So let us consider the job satisfaction of the individual soldier.

Four Questions

There are at least four questions we should answer before we will really understand what makes a soldier satisfied:

1. Why do men enlist in the Army?
2. What do men like about military life?
3. What do men dislike about military life?
4. What aspects of a military career are considered important by representative combat soldiers?

Each reader undoubtedly could produce a list of answers to these four questions—and many, of course, would be right—but we should look a little further before we jump to any final conclusions.

Many complex problems of group morale can either be solved or eliminated by improving the level of individual job satisfaction of large numbers of personnel through intelligent research and understanding

Answers Are Relative

Take the first question: "Why do men enlist in the Army?" If we had asked a pre-Korea recruiting sergeant, he would probably have told us of some incentives that an Army career offers: high pay, travel, security, retirement benefits, and similar attractive advantages. This would have sounded like a good explanation, but it would not have provided the entire answer. If we asked a seasoned infantryman or a tanker, we would probably be told of the pleasures of an outdoor life, the plain good feeling that comes from being a member of a first-rate combat unit, and the satisfaction involved in living and working with bonafide fighting men. These are good reasons as well, but even they do not give us the whole answer. If we asked one of our sharp young sergeants, he might answer that he figures more and bigger scraps are on the way and that he is learning his trade *well* before that time arrives. This reply, like the others, is a good one; but we still do not have a full and complete answer to the question.

The second question—"What do men like about military life?"—is the easiest one to answer, and everyone should make a passing grade on it. However, since there may be a few things we do not know about, we had better plan to look also into this matter a little bit deeper.

The third question—"What do men dislike about military life?"—deals with the unpleasant aspects of a soldier's life, and is one we had better stop dodging. Let us not kid ourselves. The life of a combat soldier can be far from pleasant at times, and every soldier is aware of this fact. We would be well advised to stop painting silver linings on every cloud that floats across our military horizon and, instead, to start looking for our trouble spots honestly. We might then be able to locate some of the points that are discouraging many persons from enlisting, and we might be able to modify some and maybe even eliminate others. In any case, we would then know what features of our life bear some explaining to the newcomers.

The final question—"What aspects of a military career are considered important by representative combat soldiers?"—is one that should have been answered a long time ago. The Army might now be making exactly the same mistake as did our civilian industries for many decades, indeed, a mistake they were making as late as the 1930's. The Army's idea of what the soldier wants from a military career might well be off base.

Consider, for example, our pre-Korea recruiting literature. In all those handsome pamphlets we read glowing phrases describing the attractive features of an Army career. We read of travel to Japan, vacation trips to the Alps, athletic programs, homecraft programs, information and education programs, United States Armed Forces Institute (USAFI) programs, and all those other programs we have been publicizing in recent years. It took extreme diligence and care to find those few references dealing with the *military* life and the military training that goes with it, and what you did find was usually well slanted. All signs seemed to point to somebody's believing that the rough facts of life—such as the need for training and maneuvers—should not be discussed. The Army's advertising consultants seemed to think that we would have scared our prospective enlistees away if we told them the whole truth about the

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Army instead of just the selected features. Perhaps we may have scared some away with such honesty, but I wonder if we might not have attracted some other more soldierly persons in their place. At least, we would not have been placed in the rather embarrassing position of having to explain to many soldiers that they are also expected to do some fighting—that came as a rude shock to many of our troops!

It should be apparent that there is justification for the statement that we need more information on the motives, interests, likes, and dislikes of the man who eventually becomes an experienced combat soldier. We will be much better qualified to examine the *job satisfaction* of each individual when we know what satisfies most individuals.

Now, what are some of the determinants of this job satisfaction that we are talking about? What variables enter into the picture?

Six Factors Involved

There seem to be at least six general factors involved.

First, there is the effect of man's being exposed to unpleasant situations on his outlook toward his job. If, for example, a young soldier who is not yet ready for the responsibilities and the demands of leadership is too soon elevated to such a position, the pressures upon him will be quite considerable and unpleasant. The way in which he responds to these pressures will have much to do with his job satisfaction.

Second, the individual's job must satisfy his social strivings or prestige aspirations. A top-notch first cook, for example, will be most unhappy if he is assigned to a unit with a full quota of first cooks in which he will fill, instead, a less important role. This is, of course, a quite unlikely situation today (since we have no great abundance of qualified cooks), but the example serves to illustrate the point.

Third, the individual's abilities and personality must fit the requirements of his job. When they do not, he will not be able to handle it in the proper manner and he may be the very first to recognize this fact. It is generally acknowledged, for example, that a man can have too little *or too much* intelligence for some jobs. The problem is to match the whole man to an appropriate job.

Fourth, the soldier's job must provide economic and psychological security. Consider the case of the newly promoted squad leader who was never praised or encouraged in spite of all his best efforts to do a good job. As a result, he became uncertain as to whether he was doing his job in the proper fashion and all signs of individual initiative soon faded away.

Fifth, the individual must be able to identify himself with the group of which he is a member. This identification of self with group, which is known to psychologists as the belongingness or in-group feeling, has a tremendous amount to do with an individual's outlook on his own situation or, in other words, his morale or job satisfaction. The greater the extent to which he makes the goals of the group his own, the higher will be his level of job satisfaction. Conversely, the greater the degree to which his goals conflict with those of the group, the more probable are the chances that you have a dissatisfied soldier in your unit.

Sixth, the ability of the individual to adjust to his fellow soldiers is important. We have all seen cases where a man just cannot seem to fit himself into the group to which he is assigned. Unhappiness is the inevitable result when this occurs, and the individual concerned is extremely dissatisfied with his lot.

Now there are two implications involved in low levels of individual morale or job satisfaction that are of interest to unit commanders.

First, the dissatisfied soldier, like the

dissatisfied worker in industry, often does not realize exactly *why* he is experiencing discontent. In industry, this frequently results in a worker's concluding that he should be paid more money, even though his wages might, in fact, be well above average. Similarly, the dissatisfied soldier might quite honestly, but incorrectly, attribute his discontent to fancied persecutions, poor leadership, inept noncommissioned officers, or chicanery on the part of his "buddies," instead of to the unrealized fact that he simply does not fit his job. A state of dissatisfaction can, in other words, create complaints which are not, in fact, indicative of the true producers of the individual's discontent. The leader must himself then determine the *actual* cause of the difficulty so that he can attempt to do something to alleviate the conditions that are apparently preventing the discontented soldier from enjoying the normal satisfactions of day-to-day living to which each person is entitled.

The second implication to the commander deals with the effect that one discontented individual can have on an entire unit—the "bad-apple-in-the-barrel" situation.

Consider the case of the young lieutenant transferred to the infantry against his will, or who wanted a different assignment and got this somewhat less attractive one instead. If his outlook toward the Army is what it should be, he will snap out of his doldrums before long and realize the situation is not as grim as he would have it. However, if his outlook is not what it should be, he might just pout like a spoiled little boy and putter away at his job and whine to anyone in earshot about his terrible misfortune. Now the chances are that the "Old Man" will straighten this youngster out in short order, but if this is not done soon enough he can damage the morale of a portion of the command. Misery seeks company, and a malcontent can seriously weaken the morale of a unit not yet sure of itself or the outlook of those young soldiers who have not yet formed sound and healthy opinions of our life in the Army. It behooves all commanders to consider the damage that might be caused in their command if an unsuspected, thoroughly bitter malcontent were turned loose in it.

Commander's Task

Some initial malassignments are bound to occur in a large Army, but these should, of course, be corrected at the earliest opportunity. Even minor changes in assignment can sometimes completely eliminate the source of a man's difficulty. Moreover, the unit commander will often be able to make important adjustments in assignment within the ranks of his own command.

However, if some of his men seem discontented or dissatisfied, the commander should ask himself a few questions before reassigning the unhappy. Are these men encountering too many difficulties in their present assignments? Do they aspire to higher level jobs than those they now hold? Are they capable of holding the jobs now assigned? Do their present jobs provide them with the security to which they might feel themselves entitled? Do they identify themselves with the commander's unit or with some other organization of which they are affiliate members (special duty groups, athletic teams, and the like)? Are they able to get along with their fellows? When the commander has the answers to these questions for each man, he must then decide what is to be done.

If the difficulties of their assignments are beginning to get these men down, they should either be relieved, or assisted in overcoming these difficulties.

If they aspire to higher level jobs than those they now hold, this attitude should be commended and examined from a realistic viewpoint. If a man's present capabilities do not qualify him for the job

that he wants, the fact must tactfully be made known to him. This will many times assist such a man immeasurably because it will help him to see what work must be done if he is to reach his ultimate goal.

If their present assignments are not providing adequate economic and psychological security, the assignments themselves must first be examined to see why they fail to measure up so far as these men are concerned. If the jobs are not found to be poor ones and, on the contrary, seem to be of a type considered satisfactory in this regard by most men, then the security aspirations of these men will need some examining.

If the trouble seems to lie in the men not identifying themselves with the unit, the reasons for this lack of identification must be determined. However, the leader should first do a little honest soul-searching to see if he has been doing *his* job in the proper fashion, because the leader himself is most frequently to blame in this sort of situation. Only after he finds his record without blemish and his performance beyond reasonable reproach can he start suspecting that the men themselves are at fault. It just might be that they have been engaged in extracurricular activities too long for their own good. More than a few men have become near-professional mattress-counters while on special duty at some post overhead supply office and have found it awfully hard to identify themselves with their regular unit when the time for maneuvers came around!

If the discontented or dissatisfied are not accepted by the command and cannot get along with their fellow soldiers, the leader must give serious consideration to the possibility that this difficulty might be eliminated if they are transferred to another type unit or to the advisability of separating such men from the service. In such cases, the commander may have to seek professional assistance in order to arrive at the proper decisions.

There are other additional factors involved in the job satisfaction of the individual, but the six we have discussed are the really important ones. When you have soundly grasped these six, you are well on the way to understanding this concept of morale.

However, do not think that this concept is the panacea to cure all morale ills! Consider it, instead, as another useful tool to be included in the kit bag of the commander—and many tools are needed when solving complex and dynamic problems like that of morale. Perhaps this approach will provide the commander with the most effective tool of them all—*understanding*.

Willingness to serve and to fight is not easy to develop or to maintain. Perhaps it is hardest of all to maintain because it is a *human* quality subject to all the mysterious influences of the mind and spirit. Napoleon Bonaparte went so far as to say, "In war, morale considerations make up three-fourths of the game; relative balance of manpower accounts only for the remaining quarter." There is no lack of scientific proof that a soldier's combat effectiveness is related definitely to his mental and spiritual attitude.

Major General John M. Devine

The Biak Operation

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This is the second of a series of two articles on this subject. The first article of this series appeared in the May 1953 issue.—The Editor.

ATTEMPTING to seize airfields on Japanese-held Biak Island, off the tip of northeast New Guinea, the Hurricane Task Force (HTF) landed the United States 186th and 162d Infantry Regiments at Bosnek at 270630 May 1944 against negligible air, naval, and ground opposition. Biak's three airfields were desired as bases for heavy bombers which were to support the invasion of the Marianas, beginning with Saipan on 15 June. Despite a confused landing which lost time and surprise, by nightfall on D-day the 162d Infantry Regiment reached Mokmer village in strength while the 186th Infantry Regiment was disposed to protect the Bosnek beachhead. However, it was by then also apparent that enemy strength had been underestimated at 2,500 combat effectives and that our maps were inaccurate. It was clear the enemy intended to fight utilizing the extremely formidable terrain (cliffs, caves, and jungle) initially for defense. The Japanese garrison commander, Colonel N. Kuzume, had relinquished overall command of the 10,000 defenders to visiting Lieutenant General Takazo Numata, and reassumed command of the 222d Infantry Regiment. General Numata's first order had been—*attack!*

Plan I

Before Biak fell, the HTF was to formulate and try numerous plans. Plan I was simply an extension of the original landing plan.

From their night position near Parai, the 3d Battalion, 162d Infantry Regiment, sent two companies along the coastal road and two (one heavy weapons) up on the terrace behind Mokmer village. The 2d Battalion was to advance along the terrace on the right of the 3d Battalion. The units were to come together again as pincers west of the Mokmer airfield and the first objective would be thus achieved. The naivete and sheer optimism of this maneuver is excusable when it is recalled that the Japanese had not yet, figuratively, fired a shot. What actually happened, however, is indicated in Figure 1.

Patrols along the coast were within *200 yards* of the Mokmer airfield when a Japanese counterattack from the west drove the 3d Battalion back, cutting off the two companies on the terrace. Intense fire from the East Caves pinned down the 2d Battalion. The 1st Battalion was ordered to move through the Parai defile and onto the main ridge to outflank the enemy positions. It traversed the defile, but the rugged terrain and fire from the East Caves prevented movement beyond Mokmer village.

Because of poor observation and the virtually impregnable enemy positions, neither the fires of the 146th Field Artillery Battalion, in direct support, nor of naval destroyers were able to silence the enemy weapons. Unfortunately, the naval fire support officer with the 3d Battalion was killed, and without liaison the naval fire diminished in effectiveness.

Late in the afternoon, the Japanese fire became extremely severe. The 2d Battalion set up a new defensive position east of Mokmer village and all units north and west of that point were ordered to come

back behind the 2d Battalion perimeter. This was done with difficulty but the night that followed was relatively quiet. The following morning, however, saw the first tank "battle" of the war in the Southwest Pacific area.

Four 9-ton enemy tanks, with construction troops serving as infantry, clashed with five American medium tanks (*M4A1*) near Mokmer village. One round of 75-mm armor-piercing ammunition stopped each enemy tank by penetrating its light armor. A second wave of three tanks was defeated in the same manner and others in the area discretely withdrew. The tank battle was over within 30 minutes.

About 1200, the Japanese again cut the coastal road at the Parai jetty by moving troops along the main ridge and then south toward the beach. Coincident with this new threat, it had become apparent to the allied command that no successful attack could be launched against the airfields until the Mokmer terraces and the East Caves had been cleared. (At the time, the existence of the West Caves was not yet known.) It was also felt that the United States infantry troops were so close to these areas as to prevent effective artillery and naval bombardment. Furthermore, communications from the ground to supporting aircraft and naval vessels were, at best, sporadic.

The commander of the 162d Infantry Regiment recommended a withdrawal which the HTF commander approved. The 2d Battalion and most of the 3d were evacuated under enemy fire by LVTs and DUKWs from the Parai jetty to Bosnek and Mandom, respectively. The remainder of the 162d Infantry Regiment and the tanks moved overland through the defile and dug in at Ibdi.

The "Engineer Navy," a flotilla of landing craft and DUKWs (some fitted to fire antiaircraft artillery, rockets, and automatic and tank weapons) executed the amphibious evacuation.

The enemy, despite sizable losses, followed up the advantage he had gained and quickly pushed troops forward and began organizing the Parai defile area in earnest, as the 162d Infantry Regiment was soon to discover.

First Reinforcement

Even before the withdrawal on 29 May, the HTF commander believed an advance to the airfields along the coast or along the ridges would be impossible without reinforcements. On 28 May, therefore, he had requested an additional infantry regiment, one light artillery battalion, a battalion of combat engineers, and another tank company.

In response to this request, the Sixth Army ordered the 41st Infantry Division's own 163d Infantry Regiment on Wakde (less one battalion) to arrive at Biak on 31 May. The other units requested were not available. Simultaneously, the Sixth Army ordered the 503d Parachute Regiment moved to Hollandia where it was alerted for air movement to Biak in case it was needed.

In spite of the frequent serious errors made by the Japanese during the fighting on Biak, their tenacious and costly defense accomplished at least a part of their mission by delaying our advance in the Pacific

Pending the arrival of reinforcements, HTF reorganized and did extensive patrolling. The 162d Infantry Regiment was reassembled as a unit at Ibdi. The 186th Infantry Regiment was spread between Mandom, Bosnek, and Opiaref.

Patrols of the 162d Infantry Regiment

discovered two trails over the ridge. "Old Man's Trail," native named, began 1,200 yards west of Mandom. Fairly wide, it swung north over a comparatively easy route, hence the nickname.

Another more difficult trail began at Ibdi, and was duly called "Young Man's Trail." Both ran through the Ibdi pocket into which Colonel Kuzume moved 800 men of the 3d Battalion, 222d Infantry Regiment, on 30 May. And *there* they stayed until the middle of July.

Colonel Kuzume was able to make this move because, during the night of 28-29 May, he and the 1st Battalion had moved overland to the West Caves from the native gardens north of Bosnek. Exactly how this was done was never learned. No trail was ever found and movement by water along the coast to Korim Bay was surely to have been discovered. Or was it? Later events established that this allied confidence (that complete surveillance of Biak was in effect) was a gratuitous assumption not completely founded in fact. In any event, and at General Numata's insistance, Colonel Kuzume moved a reinforced company *back* over the same mysterious route again and on 1 June began to observe the renewed American activity at Bosnek.

The tempo at Bosnek had indeed increased. On 1 June, the Sixth Army commander informed the HTF commander that the initiative was to be regained and that the new offensive was to be pushed vigorously, "with a view to carrying out the mission effectively and expeditiously."

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The New Offensive—Plan II

Plan II envisaged a two-pronged coordinated attack by two regiments. The 186th Infantry Regiment was to advance over the inland plateau while the 162d Infantry Regiment was to attack west along the coast. The newly arrived 163d Infantry Regiment was to remain in reserve and protect the beachhead at Bosnek. Figure 2 indicates the action from 1 to 10 June during which time colossal efforts were necessary to reach again the point near the Mokmer airfield which the 162d Infantry Regiment had reached on the morning of 28 May. Essentially, the scheme of maneuver was a return to an alternative regimental attack plan discarded as unnecessary by the 162d Infantry Regiment on D-day. That regiment had originally proposed using battalions as it was now intended to employ regiments.

It took the 186th Infantry Regiment until 2 June to get into position north of the 162d Infantry Regiment. At this point, the 2d Battalion, 162d Infantry Regiment, which had come over the "Young Man's Trail," was attached to the 186th Infantry Regiment as were five tanks, and engineer and medical support. These latter units came up over a rough road which had been discovered at Opiaref and which faded out west of the surveyed airfield. All supplies had to come around from Bosnek over this road.

Operations, 2-5 June

The Japanese had no intention of allowing the 186th Infantry Regiment to advance without opposition. The area frequently flamed into action. There were harrowing *banzai* charges marked by the use of bayonets, machetes, grenades, and bare hands. Yet the 186th Infantry Regiment moved slowly westward.

The speed of the advance was contingent upon the arrival of water over the circuitous route from Bosnek. The attach-

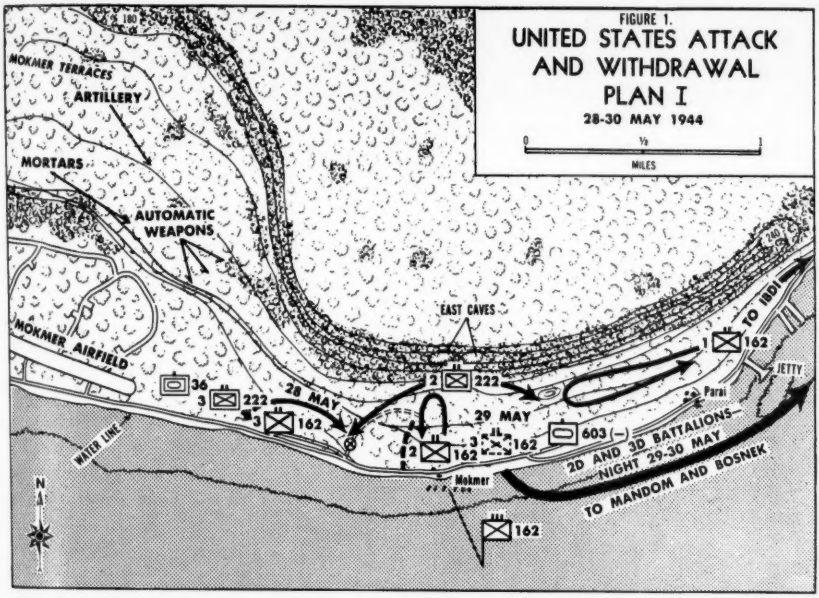


FIGURE 1.
UNITED STATES ATTACK AND WITHDRAWAL PLAN I
28-30 MAY 1944
0 ½ MILES

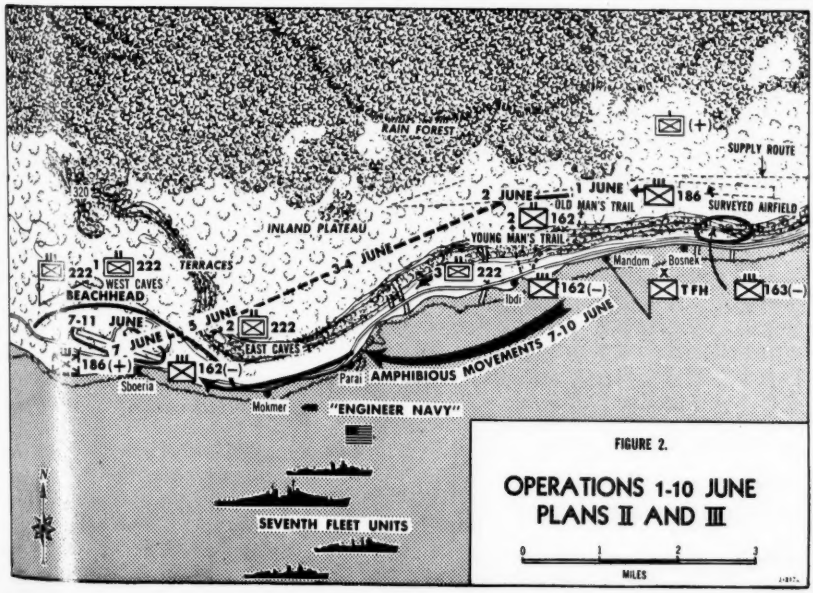


FIGURE 2.
OPERATIONS 1-10 JUNE
PLANS II AND III
0 1 2 3 MILES

ment of the 2d Battalion, 162d Infantry Regiment, added to this problem. Heat and humidity were intense and the 12-foot-high scrub growth stopped any breezes. There were not enough water trailers nor cans to supply the water needed. At night each man received one canteen of water for the next day which was hardly sufficient under the existing conditions.

During the night of 2-3 June, the Japanese literally disappeared. Initially pleasantly surprised, the 186th Infantry Regiment soon discovered the reason. The jungle had closed in. Visibility was less than 10 yards. No landmarks, not even the main ridge on the coast, could be located. Water supply became a nightmare. Supplies were inched forward by hand. Throughout the day (3 June) the regiment suffered no battle casualties, but it found nature a tough enemy. The Japanese knew this ground, and were confident that the American force would never get through to the coast overland.

Before dark, the HTF commander had instructed the 186th Infantry Regiment to send one battalion south over the ridge between the Parai defile and Mokmer, and, once over, to turn east and reduce "enemy defenses along the coastal road which were holding up the 162d Infantry." These "defenses" were located in the Ibdi pocket which will be discussed later. The regimental commander replied that no such trails existed. He suggested instead that he continue southwest to find a crossing over the main ridge at some point northeast of the Mokmer airfield from which he would patrol northwest and southeast along the ridge. This reasoning, which was analyzed throughout the night of 3-4 June, paled with an urgent radio message from the Sixth Army to the HTF at 041000 June.

The Sixth Army Intelligence Section stated, 4 days before, that: "Enemy naval intervention at this stage of the (Biak) operations is *impossible*." This assurance though grandiose was short-lived. On 4 June the radio warned that a large Japanese naval force (a battleship, cruisers, and destroyers) was following a course which could bring it to Biak that evening. Imminent Japanese bombardment and invasion was *now* a distinct *probability*. (This was the KON-1 Force. Its interesting part in the Biak operation will be discussed later.)

During the night of 3-4 June and on 4 June, Biak was subject to continuous preliminary Japanese air attacks. The grave apprehension already being felt in HTF headquarters was compounded by the naval threat. Had it also been known that the allied naval force, which was not as strong as the Japanese array, was under orders to withdraw temporarily from Biak and realign with heavier ships in case a superior enemy fleet intervened, one can only wonder what the American reaction would have been. However, once again, the luck of HTF was good. The wakeful night of 4-5 June passed as did, unexplicably, the threat from the sea.

The 186th Infantry Regiment, locked in the jungle, patrolled on 4 June. On the morning of 5 June, given permission to find a crossing on the main ridge, the regimental commander found that he had no water on hand. Time was essential because he had to find the crossing before the Japanese, realizing that the Americans had defeated the jungle, blocked the ridge. Without water, and against the advice of the staff and battalion commanders, the regiment was ordered westward. Providence rewards the diligent, for at noon a heavy rain fell. The troops halted, caught the rain in ponchos, and filled their canteens. By 1500, the 186th Infantry Regiment dug in for the night about 2,500 yards to the northeast and above Mokmer airfield.

Plan III

On 6 June, before the ridge-clearing maneuvers could be carried out, the 186th Infantry Regiment was ordered to seize the Mokmer airfield with minimum delay. The regimental commander objected for he considered it of vital importance to seize the dominating terrain north and northeast of the airfield before making any attempt to seize the strip. He was overruled.

Plan III called for a supply and water build-up on 6 June, and reconnaissance to locate a good trail toward the airfield. When the supplies were laid in after the long overland trip from Bosnek and the infantry had crossed the line of departure, the service tail and supporting artillery were to be rolled up back to Bosnek to rejoin the regiment on the Mokmer airfield via the coast road or by water.

The attack started at 070730 June. By 0850, two battalions had crossed the airfield and reached the beach, having encountered no resistance on the way. Before noon, every man was inside the perimeter on the beach! It was so ridiculously easy as to indicate that something must be wrong. What had happened?

In its move to the airfield, the 186th Infantry Regiment had unintentionally bypassed the principal Japanese defensive positions on the spur ridge. Both the leading battalions had been instructed to halt on the spur ridge and reconnoiter. The regimental commander received a negative report, according to his statement, and the battalions were ordered on to the airfield. The Japanese at once moved in behind and closed the pass that the 186th Infantry Regiment had found over the ridge.

Meanwhile, the 162d Infantry Regiment had been unable to advance through the Parai defile and so the 186th Infantry Regiment was alone in the same position that was considered untenable and evacuated on 28-29 May. Enemy reaction to the presence of the Americans was the same as it had been on 28-29 May—intense bombardment from the bypassed terraces and from the East Caves. The United States troops dug in for dear life. Frantic efforts to supply them by amphibious craft were successful only after darkness fell.

Although 28-29 May was *almost* reenacted, there was one salient difference —this time the Americans *stayed.*

It was not altogether a hollow victory. The Mokmer airfield had been seized and, despite difficulties, it was obvious that the regiment could be supplied. However, the *sine qua non* was unchanged. The terraces had first to be cleared before the airfield could be repaired and used by anxious allied air forces.

From 8 June until 10 June, the 186th Infantry Regiment made several fruitless attempts to link up with the 162d Infantry Regiment at Ibdi. Fire from the East Caves stopped these efforts eastward. The Ibdi pocket held the 162d Infantry Regiment at bay as it had since 2 June. During this period, company action against the terraces merely confirmed what was already known too well: the ridges were strongly held by the Japanese.

The HTF commander then decided to move the remainder of the 162d Infantry Regiment (the 2d Battalion was already attached to the 186th Infantry Regiment) by a shore-to-shore amphibious movement from Bosnek to Parai. This was accomplished on 10 June under severe fire. West from Mokmer, the coastal road was still under heavy interdictory fire necessitating that the march from Parai to the 186th Infantry Regiment perimeter be accomplished in a column of files in the lee of the coast shelf. The troops waded through waist-deep surf much of the way. The next day, 11 June, another offensive, aimed at clearing the Japanese from the terraces, began.

Plan IV—(11-15 June)

The new attack (see Figure 3) to eliminate fire on the Mokmer airfield, in order to permit the repair of the field, was to start at dawn on 11 June. The plan was to sweep the high ground together with a concurrent push along the coast to seize the two remaining airfields. Phase lines rather than specific objectives were assigned initially.

It was impossible to execute this plan. While the 186th Infantry Regiment reached the line of departure in 45 minutes and the first phase line in less than 2 hours on 11 June, the 162d Infantry Regiment, which was to advance along the terraces, arrived at the line of departure about 120900 June, after bitter fighting. The 3d Battalion of that regiment still had not reached the first phase line on 15 June, and for a good reason.

Late on 11 June, the 3d Battalion learned from fugitive Javanese slave laborers of a strongly guarded water hole and camp near large Japanese-occupied caves 1,000 yards to the northwest. The significance of the first information concerning the enemy's West Caves stronghold was not fully appreciated until late on 13 June when the assistant commander of the 41st Infantry Division inspected the forward combat area on the terraces. He was pleased to note that Company L, 163d Infantry Regiment, which had been working along the main ridge, had established an observation post on Hill 320. However, he returned to HTF advance headquarters at Sboeria prepared to recommend sweeping changes in the attack plan which had been in effect since 10 June.

These changes stemmed from his deduction that the water hole-camp-caves combination pointed to the long sought Japanese headquarters and strong point. To eliminate it, the reserve (1st Battalion) of both regiments and the 2d Battalion, 162d Infantry Regiment, were to encircle the caves. The 3d Battalion of that regiment was exhausted, had already lost much of its effectiveness, and was pinched out. As 15 June ended, these units were still trying to get into position east, south, and west of the caves to launch a coordinated attack.

Changes in United States Command

The day of the Marianas invasion (15 June) had come and gone, and still no combat plane rose from the Biak airfields. Engineers were driven off the Mokmer airfield repeatedly by fire from the terraces. Belated efforts to construct a fighter strip of Owi Island offshore missed the readiness date by a week. For all its troubles, HTF had failed in one of its principal missions: establishment of operational airfields on Biak prior to 15 June.

A series of searching inquiries, beginning about 1 June, from the Sixth Army commander to the HTF commander, expressed dissatisfaction with the progress of operations. GHQ, SWPA, several times had expressed concern to the Sixth Army commander over the continued delay in securing the objectives on Biak. The army commander's observers on Biak had reported to him a "lack of determination, especially at the battalion and company levels; ineffective reconnaissance; and a reluctance by the staff to visit the front lines." It was also felt that the assistant division commander was not being fully utilized. On 13 June, reinforcements were again requested by HTF on the basis of troop fatigue and suspicion that sizable Japanese reinforcements had reached the island. On 14 June wishful thinking got out of hand and victory on Biak was prematurely announced to the press. Although the army commander placed little credence in the contention that enemy reinforcements were being landed, the 34th Infantry Regiment, 24th Infantry Division, landed on Biak on 18 June in response to the 13 June request for augmentation.

Continuing dissatisfaction with the conduct of operations on Biak caused the army commander to dispatch from Hollandia the United States I Corps commander and essential staff personnel, less troops, to Biak on 15 June. Under a corps arrangement, the HTF commander was to retain command of the 41st Infantry Division. The I Corps commander was to assume control of all forces on the island and command of the HTF.

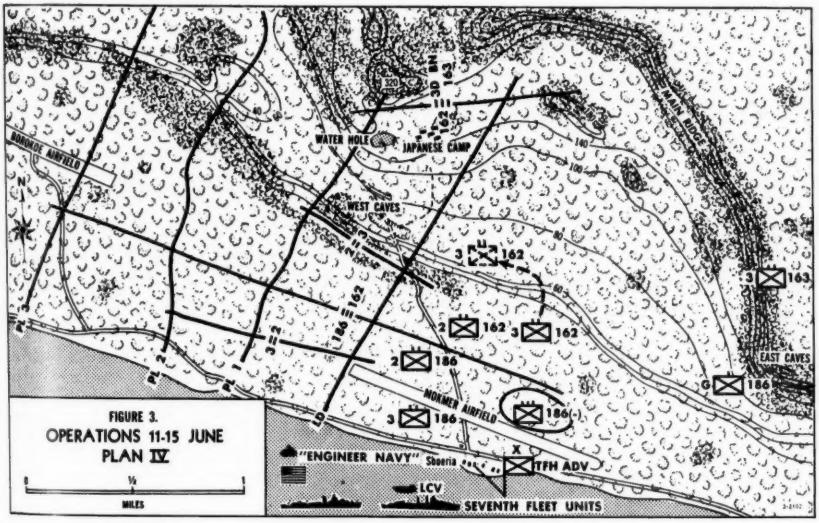


FIGURE 3.
OPERATIONS 11-15 JUNE
PLAN IV

Despite the assurances of the I Corps commander that the new command structure was aimed only at expediting victory on Biak, the HTF commander decided, under the circumstances, not to remain. He requested relief, which was immediately forthcoming, and departed the island. The command of the 41st Infantry Division passed to the assistant division commander. However, the suspicions of the departed HTF commander regarding enemy reinforcements had been correct. Unknown to the allies ashore, the Japanese had developed, and partially executed, ambitious plans for the reinforcement of Biak.

Contrary to allied estimates, the Japanese *were* willing to risk important naval air and surface units to ensure that ground reinforcements reached Biak. The Navy Section of Imperial General Headquarters expressed its belief, by a warning order on 3 May, that the decisive naval battle was at hand and that it might be fought in Geelvink Bay. The Wakde landing on 17 May signaled the final deployment for *A-GO*.

Accordingly, the Japanese Navy chose between the horns of a great dilemma. It reconciled itself to the loss of Geelvink Bay and concentrated on the defense of the Marianas.

The possible seizure of the Marianas by the allies was viewed by the Japanese as an unparalleled calamity spelling the loss of the war. However, the allies invaded Biak *before* the Marianas and suddenly the Japanese Navy had a change of heart. It decided that the fleet would be at a marked disadvantage during *A-GO* if it had to cope with allied aircraft from the Biak airfields.

To implement this choice, the Japanese took two drastic steps. First, approximately 150 fighter and 40 bomber aircraft were redeployed to western New Guinea. Next, in agreement with the Army, the Navy would transport the 2d Amphibious Brigade to Biak (equivalent to a United States reinforced regimental combat team), guard it en route, and support its landing with major fleet elements. Other infantry units in Geelvink Bay were to be brought in by barge. This plan received the over-all code designation of KON.

KON-1

There were three distinct KON (water army) operations. KON-1 was responsible for the alarm in the allied camp on 4 June. When darkness fell on 3 June, a formidable Japanese force was observed 500 miles away steaming directly for Biak. At daylight on 4 June allied air reconnaissance could find no trace of it. Where had it gone? More important—why had it changed its course?

Late on 3 June, Japanese scouting planes reported to KON-1 force that an impressive allied naval force, including "small carriers" (which KON-1 did *not* have), was lying off Biak. This distorted report apparently stemmed from the reconnaissance pilots' ignorance of United States ship silhouettes—LSTs were mistaken for small carriers. Unwilling to risk combat with the "carriers," KON-1 changed course for anchorages at Sorong and Batjan Island during the night of 3-4 June. Three of the cruisers turned back to Mindanao.

Of the vessels going to Sorong, the United States Fifth Air Force reported sinking one destroyer, damaging two others, and scoring direct hits on the heavy cruiser *Aoba*. The report proved somewhat erroneous for on 7 June the *Aoba* and the destroyer screen (none were sunk) sallied forth in KON-2.

KON-2

After the KON-1 action, the Sixth Army intelligence section estimated that the Japanese had temporarily abandoned all plans for reinforcing Biak. However, the estimate was wrong again—the Japanese had no intention of giving up so easily.

Reconnaissance during the period from 4 June to 6 June upset the fable of allied "carriers" off Biak, so on the night of 7 June, six Japanesé destroyers carrying a total of 600 infantry left Sorong for Biak. Each vessel towed a large barge containing from 30 to 50 men. This force was discovered by Fifth Air Force bombers on the morning of 8 June off Vogelkop. The allied report of the air-sea action that followed was "four destroyers sunk; two light cruisers chased to the northwest." In fact, one destroyer, the *Harusame*, was sunk. The remaining five sailed on toward Biak.

On the evening of 8 June, the Japanese received a report that an allied battleship, four cruisers, and eight destroyers were moving to intercept KON-2. This report was partially true because an allied force of 4 cruisers and 10 destroyers, alerted by the battle off Vogelkop, *was* en route to Biak.

Distrustful of his own reconnaissance, the Japanese convoy commander continued and was 40 miles from Korim Bay on Biak's northeast coast when the allied force came into sight. The barges were summarily cut adrift and the Japanese destroyers fled. One barge was sunk, the others ostensibly managed to gain shore. Back went the destroyers with their reinforcements to Sorong, where they landed on 9 June.

Two heavy cruisers and two destroyers of the original KON-1 force sailed from Davao on 7 June to join up with KON-2. The destroyer *Kazagumo* was lost to an allied submarine en route. The remaining ships were unable to rendezvous with

KON-2 and turned in to anchor at Batjan Island on 9 June.

Although the Japanese had lost two destroyers and had three others damaged in an attempt to land a few hundred fresh troops on Biak, KON-2 had tied up a small allied naval task force and undoubtedly had been one of the factors which had prompted HTF to call for reinforcements on 13 June. It has already been noted that this request had not set well with the Sixth Army commander, who was not convinced that Japanese reinforcements were reaching Biak.

Despite the obvious lack of success of KON-1 and KON-2, the gun-shy Japanese Navy was determined to try again.

KON-3

For KON-3 the Japanese appeared willing to make the maximum effort. KON-3 force contained the two most powerful battleships in the world at that time, the *Yamato* and the *Musashi*. There were also three heavy cruisers, two light cruisers, seven destroyers, two destroyers escorts, and numerous smaller high-speed craft. There may have been even more major vessels—the account is uncertain. By the morning of 12 June, KON-3 was assembled off Batjan Island and making final preparations for the third attempt to reinforce and bombard Biak; some sources say regardless of cost in ships and men.

However, once again fortune favored HTF. Carrier based planes of the United States Fifth Fleet made heavy strikes on the Marianas on 11 June and 12 June. On 13 June, evidently convinced that the time had come for the *A-GO* operation, the KON-3 force was disbanded as such and turned to the Palaus to rendezvous with the Combined Fleet. The last serious threat to allied naval and ground forces at Biak was over.

During the furor created by the KON movements, Japanese reinforcements *were* systematically being landed on Biak by barge from garrisons in Geelvink Bay. A recapitulation of these reinforcements is shown in the chart below.

Uncertain whether additional reinforcements would follow, Colonel Kuzume employed these troops piecemeal as they arrived. Although this was perhaps a blunder, it was an understandable one.

Date	*Strength*	*Unit*	*Source*
3 June to 12 June	400	221st Infantry Regiment	Manokwari
9 June to 16 June	500	219th Infantry Regiment	Sorong and Noemfoor
25 June	200	222d Infantry Regiment	Noemfoor

The large Japanese air reinforcement which was sent to Geelvink Bay to support KON was for nought. Many pilots were lost to malaria. Allied antiaircraft artillery on Biak took its toll. Many of the remaining pilots were lost on their return flights to their Central Pacific bases after 13 June. What effect these air losses had on the final outcome of the decisive "Battle of the Philippine Sea" in October is controversial. It is known, however, that the Japanese often regretted redeploying so much of their dwindling air fleet so far into the Southwest Pacific.

The Danger Passed

Although one of the principal reasons for the original attack on Biak was that of furnishing land based air support for the Marianas invasion, it was the *latter* event which diverted the powerful KON-3 force and thus assisted Biak in its most crucial hour. KON-3 was not only capable of destroying the HTF ashore, but was also capable of sinking all of the allied

naval vessels afloat within that area. At the time, however, allied forces had little idea how close catastrophe had brushed Biak. It remained for the Japanese to relate after the war the narrow margin by which allied operations in the Southwest Pacific area avoided calamity and delay.

Plan V

Events now moved rapidly to bring the campaign to a close. During the period 15 June to 18 June, the I Corps commander observed the fighting and thought it lacked definition and direction. On 18 June, he called off all fighting, and units were reassembled and rested.

Plan V, the isolation of the West Caves, began on 19 June with the 186th Infantry Regiment cutting the main supply road which ran north and south from the West Caves (see Figure 4). The 3d Battalion, 163d Infantry Regiment, occupied Hill 320 in strength. The 162d Infantry Regiment held its positions and was to undertake the final reduction of the West Caves. On the beach, the 34th Infantry Regiment, which had arrived on 18 June, took over the positions on the coast vacated by the 186th Infantry Regiment and, on 20 June, seized the Borokoe and Sorido airfields with little opposition. The remainder of the 163d Infantry Regiment patrolled in strength behind the Ibdi pocket and the Parai defile on the plateau.

On the morning of 20 June, the 1st Battalion, 162d Infantry Regiment, moved to the surface area of the West Caves. From a multitude of crevices and cracks and out of the sumps themselves poured rifle and automatic weapons fire. Drums of gasoline were then dropped into the pits and ignited, but the Japanese fusillade continued almost unabated as the 1st Battalion withdrew for the night.

On 21 June, every known demolition device, and many new ones which were improvised, were used in an attempt to reduce the caves. The techniques of reduction were frontal and vertical attack, envelopment, isolation, siege, and assault. The means included massed artillery, tanks at point-blank range, air bombardment and strafing, flame throwers, gasoline, TNT, and irritant smoke. All types of individual and automatic weapons were employed.

During the night, despite an unceasing barrage, the remaining Japanese poured out of the caves and rushed northwest up the road toward the lines of the 186th Infantry Regiment (which was still astride the road and ridges west of Hill 320). Suicide attacks against these positions resulted in heavy Japanese casualties. Farther south, other groups plunged headlong into well-organized perimeters of the 162d Infantry Regiment and met the same fate, though less severe, as those who assaulted the 186th Infantry Regiment. A few Japanese slipped away into the jungle.

These *banzai* charges were the acknowledgement of Colonel Kuzume's defeat. In an impressive ceremony in the last recesses of the West Caves, this very efficient officer, surrounded by his staff, burned the records and colors of the 222d Infantry Regiment, and committed suicide in the Samurai tradition.

Still the remaining Japanese fought on in pitiful attempts to reach safety. Time and again the caves were thought secure but American patrols would be beaten back. On 27 June, United States patrols penetrated to the innermost corners to find scenes and smells beyond description.

Meanwhile, fire on the Mokmer airfield had so reduced that on 20 June work was resumed by the 863d Engineer Aviation Battalion. On 22 June, Fifth Air Force fighter aircraft commenced operations from the field.

The fall of the West Caves, the departure of the I Corps commander on 28 June, and the mopping-up action on 30 June marked the end of the campaign's

most important phase—the securing of the airfield area. The Japanese still held the East Caves and the Ibdi pocket. It is noteworthy to state briefly how they fell.

The East Caves were systematically bombarded from 14 June until 23 June. On 24 June, medium bombers from the Mokmer airfield skipped bombs into the cave mouths only 2,500 yards from the airfield. Other assaults followed. The

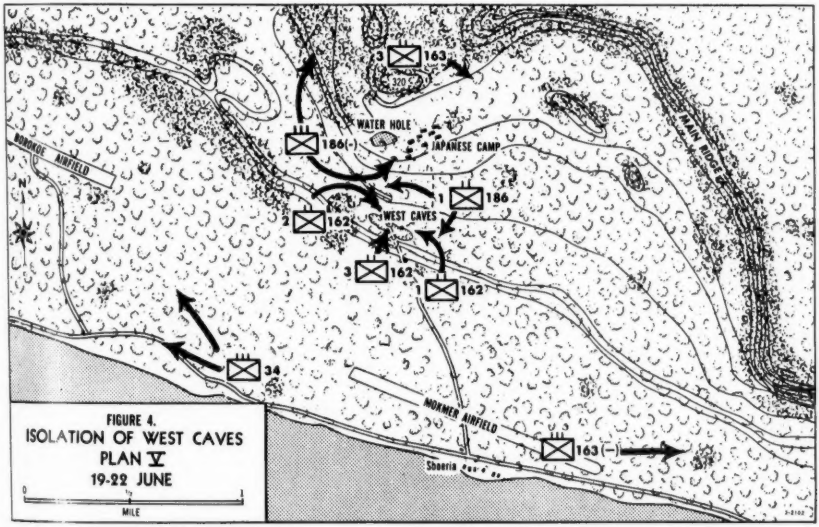


FIGURE 4.
ISOLATION OF WEST CAVES
PLAN V
19-22 JUNE

caves were entered on 30 June and found to contain ample supplies of ammunition, weapons, and food. Only the Japanese soldiers were missing, having been evacuated 2 days before in some unfathomable manner. The quarry had slipped the noose, just as it had done time and again during the action to the north.

The central portion of the Ibdi pocket was only 400 yards wide along the coastal ridge and 600 yards long. In this area, 21 major natural fortifications (caves), 75 pillboxes (some with nine layers of logs), and an uncounted number of one- and two-man holes were discovered. The reduction of the pocket was accomplished through a process of steadily compressing the Japanese into a smaller and smaller area. Between 21 June and 10 July, more than 50,000 rounds of artillery and heavy mortar ammunition were laid in this area. Yet, on 12 July, about 200 able-bodied Japanese slipped through a net of United States ambushes set up on the plateau to cut off such a move. On 22 July, a final devastating barrage, including artillery emplaced on Owi Island, naval bombardment, and heavy bombers, actually changed the configuration of the ground. Then the caves and pillboxes, still recognizable, were blown shut with TNT.

The tenacity of the Japanese defense of Biak Island was almost incredible. It was not until Bloody Nose Ridge on Peleliu in the Palaus that American troops again encountered such fanatical will to hold ground.

Allied intelligence estimated that 8,000 of the 10,000 Japanese had perished on Biak. Only 200 prisoners were taken. Those remaining, about 1,500, were without hope of aid. They could choose between sur-

render or death by disease, starvation, suicide, or vengeful natives.

On 17 August, most of the escapee Japanese rallied near Wardo Bay, north of Sorido, where they were quickly routed by a United States battalion landing force.

A main line of resistance and a prepared position were set up to protect the hard-won southern coast (see Figure 5), and the campaign was officially declared ended on 20 August, almost 3 months after it began.

Analysis and Conclusions

Although the Biak operation ended ultimately in victory and the island's airfields were an asset in later allied operations, was the victory Pyrrhic? Could it have been accomplished at less cost and with more finesse?

Casualties

The length of the campaign undoubtedly contributed to the casualties which were estimated to be 25 percent of the combat strength, and the nonbattle losses from disease and psychoneurosis of 6,811 and 423 respectively. As the battle became more protracted, the Marianas received no air support from Biak, our own future operations in the Southwest Pacific area were delayed, and the Japanese gained time to tighten their defenses elsewhere.

The confused landing on Biak was completed without sizable troop and equipment losses not because it was well planned and executed, but mainly because of surprise, the experience and courage of troops used, and the unwitting co-operation of the Japanese. The allied landing emphasizes once again that joint planning under one roof is a continuing essential for proper co-ordination. Efficient amphibious operations also require special training in which rehearsals play an indispensable part.

The risk involved in operating on Biak beyond the range of guaranteed air support might have been serious had the Japanese reaction been more timely and in mass. Carrier-borne aircraft would have avoided, or at least lessened, this risk.

Intelligence

The dearth of detailed combat, strategic, and medical intelligence and the hastily produced, inaccurate maps were not peculiar to Biak. As for the maps, much of the Southwest Pacific area was uncharted and unknown. An excellent job was accomplished in producing *any* maps.

The Biak operation also brought out the fact that a difficult choice must often be made between the hope to fall heir to enemy installations through an initially undeterminable amount of combat, such as on Biak, or deciding to build needed installations anew under more favorable conditions, such as at Hollandia or some other relatively unoccupied area. In the latter event, any bypassed enemy installations would have to be neutralized by other means.

Fire Support

Much has been said of the fire support of artillery, the fleet, and air bombardment. A fair analysis of Biak would be that the initial shortage of infantry was to be compensated for in some degree by such fire support. In the future, any tendency to confuse support power with combat power must be recognized for what it is—a delusion. Support power will not serve as a substitute for needed combat power. If this is done against stern enemy defenses, a hazard is thereby accepted which may prevent gaining the objective promptly where time is a factor. Properly *balanced* forces must be provided. It should be noted that before the Biak operation was over, the infantry force was doubled.

From the tactician's point of view, it would appear that the failure to turn the

186th Infantry Regiment west and switch missions with the 162d Infantry Regiment early on D-day was a mistake. Rather than mill about the beachhead, the former force might have been better employed to seize positions in the Mokmer airfield area at once and thus capitalize on the surprise achieved.

Who can say that if this were done, and reinforced quickly and adequately, that the issue would have been settled rapidly? Perhaps *any* force would have been turned back. Yet, as later events turned out, it was a chance, along with all the others, which might well have been taken. It could not have resulted more disastrously than the withdrawal of 29-30 May, and it *might* have put forces in the Mokmer airfield area to stay. The inflexibility displayed hardly seems justified with so little knowledge of the enemy and terrain.

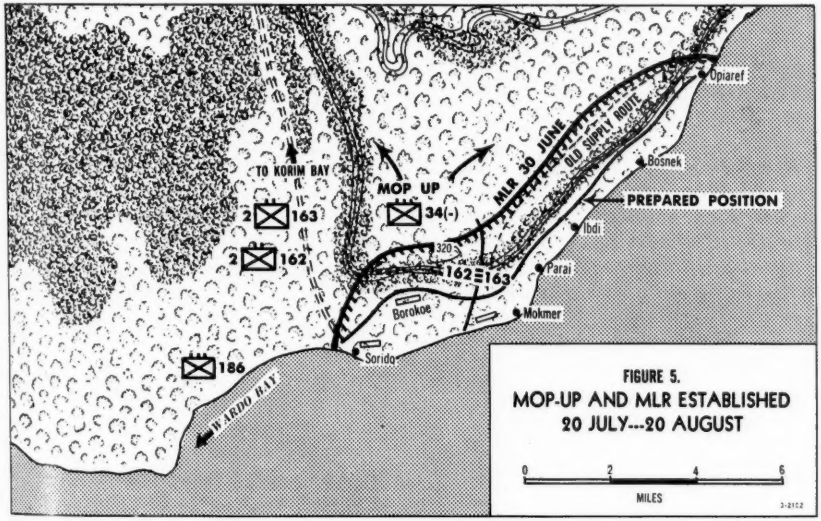


FIGURE 5.
MOP-UP AND MLR ESTABLISHED
20 JULY---20 AUGUST

Divergence of Effort

Operations from 1 June to 7 June harbored a divergence of effort. This imposed a great burden on the 186th Infantry Regiment on the plateau while the 162d Infantry Regiment was immobile on the coast. Since these two areas were not within mutually supporting distance of each other, the 186th Infantry Regiment came onto the Mokmer objective alone, spent from its long march. Had it stayed on the ridge *behind* the Japanese defenses, and the 162d Infantry Regiment converged in some manner frontally, the battle may have ended sooner.

The continual splitting of the regiments into battalions, and of battalions into company actions, may have violated the principle of mass. At the small unit level, however, the peculiarities of terrain often precluded an effective application of mass.

The major tactical enigma is why the 186th Infantry Regiment was ordered directly to the beach on 7 June before securing the ridges. The regimental commander indicated that superficial reconnaissance by battalions was responsible for bypassing the spur ridge defenses on the way to the beach. *This* error, however,

grew out of the order to proceed to the coast with minimum delay.

A lack of co-ordination was evident until 19 June. Although the units on Biak were constantly on the offensive, units attacked piecemeal and without apparent regard for the results possible through a complete convergence of effort. The effect of such divergent efforts frequently enabled the enemy to maneuver behind the allied force and, by traveling through the cave system, assemble sufficient forces to contain the individual attacks.

Reinforcement

A debatable academic question can be posed regarding reinforcement. Would not the tactical situation on 28 May and the urgency of securing the fields indicate a need for a new plan which would employ the 503d Parachute Regiment available on that date? It is interesting to note that the regiment dropped on the air strips of Noemfoor Island, also in Geelvink Bay, on 2 July.

The initial shortage of tanks can be overlooked in view of the uncertainty regarding terrain. It soon developed that the coral and limestone plains of the coastal area appeared suitable for their employment in considerably larger numbers. However, no additional tank units were ordered to Biak.

Other Considerations

The influence of pressure from higher headquarters was marked throughout the battle, although it was not reflected in the employment of specific units. Apparently, this pressure was not passed along to the regimental commanders, one later stating: "I knew of no pressure on the task force (HTF) commander. Had I known of the need for speed in supporting the Marianas attack I might have acted differently on several occasions."

Whether or not the relief of the HTF commander was entirely justified is a question which cannot be answered categorically. By 15 June, it was only a question of time before the West Caves' and the low ridge would be secured. After acquainting himself with the situation, the I Corps commander employed the same forces in the same area and in much the same manner as the relieved task force commander had been using them.

The battle for Biak was replete with errors. If those of the HTF have been overemphasized herein, the balance may be redressed by noting that the Japanese committed the greater and more disastrous errors.

Considering the importance of Biak, the Japanese air, ground, and sea commanders were amazingly remiss in security. At the island level, there was no significant beach defense on D-day. Although the island itself was stoutly defended, the Japanese had failed to set up an integrated defense system, electing instead to employ strong points. The Japanese Navy was indecisive during the KON reinforcements while the ground commander on Biak was foolhardy in using his best troops in the Ibdi pocket after it had been enveloped on 10 June.

Although the Japanese defense delayed the allied advance in the Southwest Pacific area, the cost was great. Biak's vital airfields, the naval anchorage, 10,000 men, 150 combat aircraft, and several front-line combat naval vessels were lost. It must be said, however, that the Japanese defense on Biak was an example of superb infiltration techniques and the masterly use of individual features of terrain. No better defenses were encountered throughout the entire Southwest Pacific campaign than those on Biak.

MILITARY NOTES AROUND THE WORLD

UNITED STATES

Guided Missiles Cannot Miss

The Army has announced that it has guided missiles so good "it is almost impossible for them to miss a target."

The announcement stated that enemy planes can dive, bank, sideslip, or turn tail but the new weapons still will knock them out of the skies.—News release.

Armored Leggings

Some American fighting men in Korea soon may be sheathed in armor from neck to ankle.

Armored vests are standard. Armored shorts are being tested in combat. Armored leggings apparently are next.

The latest item in the fast-developing body armor program is the nylon-armor legging, which will be attached to the shorts.

None of the leggings have been sent to Korea, but are expected soon. They are being tested by the Quartermaster General's office in Washington.

The use of the leggings probably will be limited to mine detection teams. Leggings, plus other armored garments, would result in too much of a load for the combat soldier.

The armored vest weighs 8 pounds and the shorts 4 pounds. The leggings would add 8 pounds more for a total of 20 pounds.—*Army Times.*

Rocket-Firing Device

The Air Force recently took the wraps off a secret rocket-firing device in the *F-86D Sabre* jet interceptor which automatically unleashes rockets capable of

The first photograph of the rocket firing device on the *F-86D Sabre* jet interceptor.

shooting down the world's largest bomber with a single volley.

Designed as a high-altitude, all-weather interceptor, the *Sabre* can carry twenty-four 2.75-inch rockets in a retractable launching pod which pops out from the plane's fuselage. After firing, the pod snaps back into the airplane giving it a streamlined surface. Each of the rockets is considered roughly equivalent to a 75-mm artillery shell.—News release.

High-Altitude Suit

The nearest thing to an interplanetary space suit, outside of comic books and television, is the Navy's new high-altitude pressure suit.

Garbed in this plexiglass-helmeted rubber suit, pilots may now abandon jet or

The Navy's new high-altitude suit.

rocket aircraft in atmospheres bordering on outer space—and live to tell the tale.

The new suit creates an artificial environment for the pilot similar to the atmosphere of earth. It is designed to inflate automatically to survival pressures in case of failure of a plane's pressurization system. Should a plane be damaged so that it must be abandoned at heights near 100,000 feet, the suit carries its own supply of oxygen and air under pressure. This supply will sustain life as the pilot plummets through space on his way down to breathable atmosphere. Without suit protection, man could not fall from great heights fast enough to remain alive during the time taken to reach his natural atmosphere.—News release.

Radar-Defying Aircraft

Military aircraft capable of eluding the radar screen of enemy watchers are now believed feasible for the United States.

The development of new types of reinforced plastics have put this country in a position to produce complete aircraft structures for supersonic jets and guided missiles. The new plastics are not only lighter than most metals, but have greater strength than aluminum or steel alloys used in the construction of high-speed aircraft.

The material enjoys the advantage of being almost completely electronically transparent and, therefore, immune from being picked up on radar screens.

It is estimated that airframes of the new material could be turned out in mass production at one-fifth of the cost of the metal frames.—*The New York Times.*

Primary Trainer

The *T-34A* primary trainer has been ordered into sustained and quantity production for the Air Force.

The new two-place trainer will replace the familiar *T-6 Texan* which, since the end of World War II, has been used as an interim primary trainer in lieu of a more suitable aircraft.

Powered by a 225-horsepower Continental engine with a constant speed propeller, the new Air Force trainer has a top speed of 180 miles an hour, a service ceiling of more than 20,000 feet, and a range of 785 miles. It is equipped with a fully retractable tricycle landing gear having a steerable nose wheel. Gross take-off weight is approximately 2,900 pounds; wing span is 32 feet 10 inches, length is 25 feet 11 inches, and height is 9 feet 7 inches.

The plane's defrosting, defogging, heating, and ventilating equipment and instrumentation make it suitable for training missions under a wide variety of flight conditions.—News release.

Wooden Truck Bodies

Three experimental truck bodies made entirely of wood have been developed for the Army and are being tested at the Aberdeen Proving Ground, Maryland.

Should the models survive the severe obstacle trial-runs at Aberdeen, and prove their fitness and durability, the wooden bodies could be employed during wartime to conserve steel and relieve pressure on the automotive industry.—*Army Navy Air Force Journal.*

Air Defense Code

The Government is thinking about setting up a nation-wide system of secret codes and maneuvers to make it easier to spot enemy planes approaching the United States. The plan, called the "multiple corridor identification system," is being worked out by the Air Force and the Civil Aeronautics Board. It involves giving civilian pilots secret flight plans for approaching the United States and secret maneuvers and codes for use if a plane is driven off a prescribed course.

The system has already been put into effect on a trial basis on the west coast with "encouraging" results, according to an Air Force official. The number of costly jet interceptions of unidentified planes has been reduced by about 50 percent as a result.—News release.

Heating Unit for Wounded Soldiers

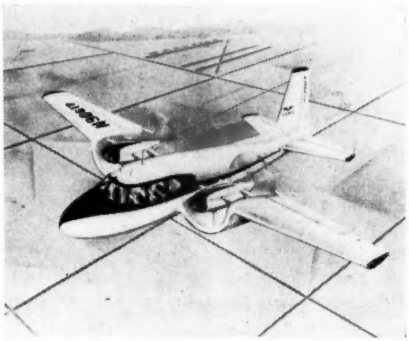
A heating unit has been developed which can be slipped into casualty evacuation bags to keep wounded soldiers warm on their trip from the front to the aid station or hospital.

Insulated with fiberglass, the unit is so arranged that one flat side is porous and the other is nonporous. An inner layer of fiberglass holds a catalyst such as carbon black which is distributed among the fibers. In the middle of the unit is a fuel reservoir which feeds fuel to the fiberglass.—*Science News Letter.*

Channel-Wing Plane

Flight testing will begin this year on a revolutionary new channel-wing aircraft —the *CCW-5.*

Data from full-scale research and wind tunnel testing during the past 10 years indicate that this plane will take off at 10 miles an hour, cruise at 275 miles an hour, and have a maximum speed of 300



Artist's drawing of the versatile *CCW-5.*

miles an hour. It will have a service ceiling of 28,000 feet and a range of 1,800 miles.

This five-place plane will hover like a helicopter, yet fly faster than a normal airplane of the same size.

Its manufacturer terms it the hybrid-convertiplane, and states that it will be the forerunner of backyard aircraft.—News release.

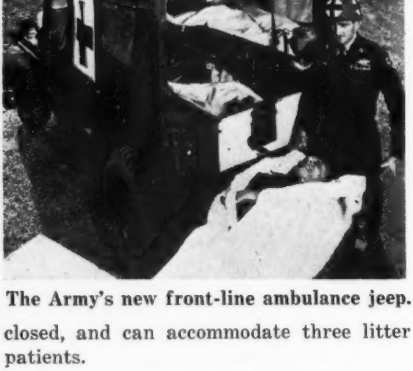
Airline Capacity Increases

With 5 times as many airlines and each averaging twice the size of those used in 1943, today's United States commercial air fleet can carry 10 times as many passengers as it could 10 years ago and can carry them twice as fast. There are currently 1,016 aircraft operating, with a total seating capacity of 38,436, in contrast to 204 planes that carried 3,974 passengers in 1943.—*Popular Mechanics Magazine.*

Front-Line Ambulance

The jeep, military vehicle of all trades, has been converted into a front-line ambulance.

The new ambulance jeep is designed for use over rough terrain, is completely enclosed, and can accommodate three litter patients.



The Army's new front-line ambulance jeep.

The wheel base of the jeep has been increased from the normal 81 inches to 100 inches, giving the vehicle ample room for the patients and a medical attendant. The "ideal load" is two litter and one or two ambulatory patients.

Parts used in the manufacture of the new ambulance jeep are 96 percent interchangeable with other standard jeeps used by the armed forces.—News release.

Army Aviation School

The Army recently announced the opening of its own aviation school at Fort Sill, Oklahoma. The school will give tactical training to pilots and mechanics of all branches of the Army that now use or may eventually employ light planes and helicopters.

In the last few years, limited training has been given by the Air Training Department of The Artillery School, also located at Fort Sill.—News release.

Plasma Substitute

The Army Medical Service has broadened its tests of dextran, a plasma substitute derived from sugar, to include all medical units in the United States and oversea theaters.

Army physicians have been authorized by the Surgeon General to requisition and use dextran wherever they believe it may be suitably employed in place of plasma.

Extensive trials of dextran in military and civilian hospitals in the United States and on combat casualties in Korea have shown that the plasma volume expander possesses many of the qualities of blood plasma and may eventually supplant plasma if present findings are confirmed.—*Army Times.*

Robot Pilot

A new robot device has been developed for the Air Force that enables a plane to take off, fly to a given destination, and land without a human hand touching the controls.

The device, which operates something like the old-fashioned player piano music roll, is not the same as pilotless flight, since a human pilot is present in the plane.

Called the automatic master sequence selector, the robot device is intended for automatic long-range flights from coast to coast, or across the ocean, to relieve the pilot of his manual duties and make him simply a flight "monitor." It employs a highly intricate electric "brain" which receives instructions from a punched tape.

A special coding device punches the tape according to a flight plan made out in advance. The plan is divided into such sequences as taxiing down the runway, takeoff, climbing to altitude, directional heading toward the destination, and landing.

Since the device also controls the plane's air speed, the flight is made in the length of time specified in the plan.—News release.

Salvage Operations

The Army has announced that salvage operations to reclaim discarded equipment in Korea have saved the American taxpayer about a billion dollars during the past year.—News release.

Stacking Aid

A new circular slide rule has been developed which permits rapid determination of safe stacking heights for solid or corrugated fiberboard containers. Moreover, it can also be used in designing containers to meet specified stacking load conditions.

The slide rule incorporates research findings on the relationship between ring crush test of fiberboard components (liners and corrugating medium or plies of solid fiberboard) and the top-to-bottom compression strength of boxes made with the combined board. As a result, the slide rule computes stacking strength in terms of type of board, perimeter of box, direction of loading, moisture content of board, and duration of storage.—News release.

Research Spending

The Government spent $1,839,000,000 for all types of research and development activities during the 1952 fiscal year, according to a recent announcement by the National Science Foundation. It said the estimate for the current fiscal year was $2,189,000,000, and for the 1954 fiscal year $2,327,000,000.—News release.

Robot Psychologist

The Army is using an electronic brain to help find out "which men are the right men for which Army jobs." This "robot psychologist," called a psychological matrix rotator, draws up behavior patterns from the results of paper-and-pencil tests given to various groups of people, such as doctors, truck drivers, and mechanics. With the complex computer, the Army hopes to improve mass psychological testing.—News release.

Turboprop Transport

The Air Force recently announced the first details of a new turboprop airplane designed to fly faster and higher than any current military transport.

The forthcoming troop and cargo plane is the first transport designed from the outset to use the new turboprop engine, which harnesses jet power to conventional propellers. Designated the *C-130*, it is designed to fly assault and support missions, carrying troops or supplies to the front and returning casualties to the rear.

A model of the *C-130* turboprop transport.

As a personnel carrier, the long-range plane may be used for paradrops or ground support. As a cargo plane, it will carry large pieces of equipment such as a 155-mm howitzer and its prime mover. It also can be fitted as a hospital plane to carry patients on litters.

Troops can be discharged through a rear door. The same door can be used on the ground to drive vehicles directly into the plane. It also has a large cargo door forward.

The *C-130* will have a wing span of 132 feet, a length of 95 feet, and a height of 38 feet. It will require only short take-off and landing runs, and with special tandem-wheel tricycle landing gear it can operate off small emergency landing fields in forward areas or on rough, unfinished air strips.—News release.

FINLAND

Trade Pact

The Finnish Government recently announced that it had signed a 120 million dollar trade pact for 1953 with the Soviet Union. The pact, signed in Moscow, is part of a 5-year agreement between the two countries.—News release.

HUNGARY

Satellite Stations

Two new radio stations recently began operating in Hungary; one at Gyor, near the Austrian border, and the other at Pecs, near the Yugoslav border. Western observers believe that these are the first in a chain of stations to be constructed on the frontiers of the satellite states to broadcast propaganda, give instructions to Communist Parties outside the captive area, and jam Western programs.—*News From Behind the Iron Curtain.*

ITALY

Shipbuilding Contracts

The United States Navy and an Italian shipbuilding and steel combine recently signed a contract for an additional 5½ million dollars worth of shipbuilding in Italy under the United States offshore procurement program (MILITARY REVIEW, Apr 1953, p 70). The contract, which calls for the construction of minesweepers during the next 2½ years, brings to more than 65 million dollars the total of offshore shipbuilding contracts placed in Italy.—News release.

NATIONALIST CHINA

Treaty of Amity

Nationalist China and Spain recently signed a treaty of amity providing for the negotiation of agreements on extradition, commerce, navigation, consular rights, and cultural relations. The accord is the first between the two countries since diplomatic relations were broken off 16 years ago.—*The New York Times.*

CHILE

Polar Air Route

Chile is planning to establish a direct air transportation link with Australia across the South Pole, according to *Noticias*, publication of the Council for Inter-American Co-operation.

As part of this program, the Chilean National Air Force will build Chile's first airfield in her antarctic territory. The airfield will be in Foster Bay, Deception Island, and will have a runway 4,000 feet long.—*The New York Times.*

PERU

Iron Ore

A recent survey indicated that Peru had proved iron ore reserves totaling 40 million tons, according to *Noticias*, publication of the Council for Inter-American Co-operation. The publication explains that it is likely that Peru, in addition to her proved reserves, has other iron ore deposits totaling 130 million tons. The country also is known to have coal reserves totaling 4 billion tons.—*The New York Times.*

PHILIPPINES

Army Strength

The Philippine Army reported recently that it would be reduced by 3,350 officers and men by 1 July because of a lack of funds. Its present strength is 55,853.—News release.

EGYPT

Trade Agreement

Egypt and Eastern Germany recently agreed on the exchange of more than 11 million dollars worth of goods. Payment will be on the basis of the Egyptian pound and the East German mark.

Under the agreement, Egypt will send Eastern Germany cotton, manganese ore, and phosphates in exchange for fertilizers, agricultural machinery, printing machines, and cardboard.—News release.

DENMARK

Civil Defense Forces

The Danish civil defense forces have reached the estimated goal given to the North Atlantic Treaty Organization a year ago. The aim was 60,000 volunteers. That figure has been reached and is increasing. —Danish Information Office.

CANADA

Arms Aid

Canada announced recently that she would contribute 324 million dollars worth of arms, equipment, and training to her Atlantic Pact partners during the current fiscal year.—News release.

Aircraft Project

Canada has embarked on research to develop a fighter aircraft that will take off vertically and fly at speeds in excess of 1,000 miles an hour.

The Royal Canadian Air Force has announced that the project, still in the preliminary stages, is getting the full attention of a group of technicians and specialists in aerophysics. Details of the proposed craft have not been released because of security reasons, but it is expected to embody the gyroscopic principle with the jet power plant revolving around a stable central control cockpit. Such a craft would be able to rise vertically from bases without runways and rapidly attain supersonic forward speeds.—*The New York Times.*

NORWAY

Air Traffic Agreement

Norway and Japan have signed an agreement covering civil air traffic between the two countries.—News release.

Naval Base

The new Norwegian naval base to be built at Vathopen, south of Bergen, will be named Haakonsvern after King Haakon.—Norwegian Information Service.

UNION OF SOUTH AFRICA

Uranium Production

The Minister of Mines announced recently that 12 or 14 more uranium plants would be built in South Africa. United States and British interests will invest 85 million dollars in them, and an additional sum of more than 20 million dollars will be invested in providing the large electrical supply needed, making a total of more than 100 million dollars.—*The New York Times.*

COMMUNIST CHINA

Industrial Training

The Chinese Communist Government is making over the country's educational system, with emphasis on subjects dealing with heavy industry, according to the New China News Agency.

Chinese colleges and college teachers were subjected to an intensive course in "ideological remolding" in 1952, to get them on the Communist path. Teachers not pliable or adjustable to the Communist ideas were weeded out. The Communists converted most institutions into technical schools and also built more technical schools.—News release.

CZECHOSLOVAKIA

Diplomatic Language

Czechoslovakia, possibly setting the fashion for the other East European satellites, suddenly has abandoned the use of French as a diplomatic language and substituted Russian.—News release.

INDONESIA

Nationalizing Tin

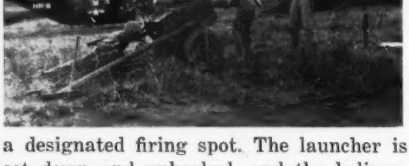
The Government took over full control of the rich Bangka Island tin mines recently in the first step of what will eventually lead to nationalization of all strategic mining industries in the country. Bangka supplies the major portion of Indonesia's annual 34,000-ton tin production.—*The New York Times.*

KOREA

Marine Raids

Marine "hit-and-run" raids, using artillery-toting helicopters, are giving the enemy in Korea cause for confusion and alarm. With a four-man firing crew aboard and a multiple-rocket launcher dangling from its middle, a helicopter heads for

Above, a rocket launcher being landed. Below, the crew preparing it for firing.



a designated firing spot. The launcher is set down and unhooked, and the helicopter, its blades still revolving, waits in readiness while the crew scurries about unloading the ammunition. After the target is zeroed in, a barrage of rockets is released. Then, before the smoke has cleared, the copter picks up the crew and launcher and leaves before enemy artillery can register on the firing site, which is easily tracked by the trails of smoke and dust that are created by the rockets. A few minutes later, a repeat performance of this hit-and-run technique is staged at another location.—*Popular Mechanics Magazine.*

WESTERN GERMANY

Oil Production

New discoveries have raised Western Germany's oil production to a point where one-third of the country's annual consumption can be covered with domestic production.

Last year's production was 1,750,000 tons and more than 2,000,000 tons is anticipated this year.—News release.

Barter Agreement

German trade officials reported recently that a new barter agreement between Eastern and Western Germany had been signed providing for the shipment of about 100 million dollars worth of goods in each direction this year.

It was one of the largest agreements negotiated so far between the two governments. Western Germany is to provide heavy machinery, steel, textiles, chemicals, and agricultural products. Eastern Germany is to send 650,000 tons of coal to West Berlin plus chemical raw materials, mineral oils, and agricultural products.

The last agreement, signed in August 1952, provided for only half the volume of the new pact.—*The New York Times.*

Radar for Fog Protection

All Rhine River steamers are being fitted with German-made radar equipment to prevent future hold-ups in fog.

The radar sets, which cost about 4,000 marks (about $925), also are being supplied to local shipping in Western Germany's North Sea ports.—News release.

French Garrison

The old German town of Koblenz is to become one of the largest French garrison towns in Europe, a "Little France" on the Rhine.

Military barracks, housing projects for dependents, hospitals, and storehouses are being built at an estimated cost of more than 23 million dollars.—News release.

JAPAN

Military Uniforms

The Ministry of International Trade and Industry announced recently that Burma had placed a $260,000 contract for military uniforms in Japan.—News release.

AUSTRALIA

Atomic Powerhouse

South Australia hopes to have a 100,000- to 400,000-kilowatt atomic powerhouse operating by 1958, according to an announcement by the State Director of Mines. He stated that because of its low fuel reserves South Australia was possibly the one area in the British Commonwealth where atomic energy would be economical today.—News release.

Bulletproof Vests

The Army has announced that some Australian soldiers in Korea are to be issued bulletproof vests. The vests are designed to provide protection against shell and bomb fragments and low-velocity small-arms fire. The scale of issue will depend on the areas in which the troops are serving.—*Australian Weekly Review.*

Lightweight Radio

Australia's Supply Department has developed a lightweight, two-way radio set for Army use. The new set, which can be carried on a signaler's belt, is expected to bring about a radical change of tactics in Malaya, where it was recently tested.—*Australian Weekly Review.*

New Rail Link

The rich uranium deposits being worked in South Australia are to be provided with direct rail communication with the uranium treatment works at Port Pirie. This will be achieved by a rail link with Radium Hill, where the mines are located, to a point on the Broken Hill-Adelaide line. Work on the $600,000 line will begin immediately.—*Australian Weekly Review.*

SWEDEN

Centurion Tanks

The Swedish Army announced recently that it would purchase 80 *Centurion* tanks from Great Britain at a cost of 20 million dollars. Funds for the purpose were set aside in the recent budget. The *Centurion* is more than twice as heavy as the largest Swedish-built tanks.—News release.

CEYLON

Canadian Aid

Canadian engineers will build a 2 million dollar electric distribution system in Ceylon, modeled after America's Tennessee Valley Authority.

Already United States engineers have completed a huge dam which will provide electricity and divert water for irrigation.

The Canadian contribution was given under the Colombo Plan, the British Commonwealth counterpart of the United States Point Four program.—News release.

USSR

Remote-Controlled Weapons

New remote-controlled weapons are being tested on the firing range at Tomsk, the center of the aviation industry of the Kusnetsk basin. According to reports, the weapons being tested are improved models of the German *Rhinetochter* and *Wasserfall* antiaircraft rockets.—*Flugwelt,* Western Germany.

NORTH ATLANTIC TREATY NATIONS

Centurion Tanks

A new contract for $8,761,657 worth of British *Centurion* tanks, trailers, and spare parts to be supplied to North Atlantic Treaty Organization troops has been signed by United States Army officials.

The contract brings to about 98 million dollars the total of *Centurion* orders in the 1952-53 fiscal year. The *Centurion* is one of the standard tanks for NATO forces.—News release.

GREAT BRITAIN

Infantry Weapons

A complete range of new weapons is being issued to British infantry units. The weapons include the 7-mm self-loading rifle; the Patchett machine carbine, designed to replace the Sten gun; and an

Above, the British Army's new 7-mm self-loading rifle. Below, the antitank grenade.

antitank grenade which is projected from a standard service rifle. The antitank grenade, weighing only 21 ounces, is claimed to be as destructive as the most powerful antitank gun of the last war.—British Information Services.

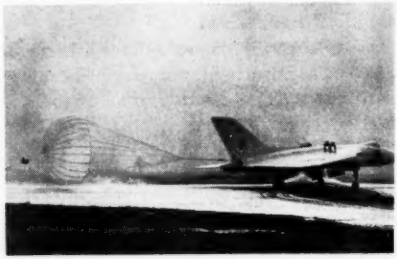
Zippered Bags for Jet Engines

New British-made jet engines now are being dressed in sprayed-on plastic bags complete with zippers before being shipped abroad.

An improvement of the cocooning technique, the new method permits engines to be "packaged" economically. A zipper is laid over the engine, and quick-drying plastic is sprayed on. The plastic forms a tough but pliable airtight coating over the engine's irregular parts and over the zipper. If the plastic web is broken, it can be patched by brushing on fresh liquid. The bag unzips when the engine is needed and the zipper can be reused.—*Science News Letter.*

Ribbon Parachutes

Parachutes made of strips of ribbon are being developed by a British firm to be fitted to the tail of jet fighters and bombers and released on landing to shorten the landing run. Ribbons are claimed to



A British *Vulcan* jet bomber releasing its ribbon-type chute while making a landing.

be better than the usual bands of silk because they take the sudden opening shock load more efficiently and fold into a smaller and lighter pack.—British Information Services.

Military Aircraft

The air forces of 32 countries are using military aircraft or engines manufactured in Great Britain or built in their own countries under British patents and licenses.—British Information Services.

Housing for American Troops

The United States may buy British-made prefabricated houses in England to provide homes for American military personnel stationed there, according to *The London News Chronicle.*

Several companies making "prefabs" are interested, the newspaper said, and they would be able to increase their production so that British housing needs can still be met. After a certain period, not yet fixed, the houses used by the Americans would become available as British homes.—*The New York Times.*

FOREIGN MILITARY DIGESTS

War by Proxy

Digested by the MILITARY REVIEW from an article by Jules Menken in "Brassey's Annual, 1952" (Great Britain).*

SINCE the end of World War II the world has witnessed a number of armed struggles of Communist inspiration. These struggles include the prolonged conflict in Greece since 1944, risings in Azerbaijan and Kurdistan in 1945, the Chinese civil war, the Outer Mongolian attack on Sinkiang in 1947, Korea, the war in Indochina, and guerrilla and insurrectionary activities in Malaya, Burma, and the Philippines. All have been linked more or less demonstrably with Moscow. All have injured the West more or less seriously. All have served the ends of Soviet policy. These conflicts may be called wars by proxy. They are *wars*, and not just bandit activities, because they have all had organization, direction, and political purpose, and have not been mere marauding forays. They are wars *by proxy* because Soviet armed forces have not been openly and formally engaged. Historical parallels are hard to find. In their essential military character these conflicts have been diversionary operations which have sapped, disorganized, and confused the West. Taken together, they present a problem which has hitherto defied solution, a challenge which the best efforts so far made have not successfully met.

Insurrections and Invasions

Wars by proxy may occur through insurrectionary risings inside a state or through the invasion of non-Communist territory by organized Communist forces. The Chinese Communist revolution is the classic example of the former; the North Korean attack on South Korea, a model of the latter. Insurrectionary risings may receive help from adjacent Communist-controlled territories, as in the case of Indochina and Greece; or they may do their best on their own with resources locally available, as in Malaya and the Philippines. Two factors are nevertheless common to all Soviet wars by proxy: all of them imply the general pattern of Communist world revolution; and all have their place in, and are finally governed by, the major scheme of Soviet strategy.

The social and political situation in which Communist insurrectionary risings become possible goes back in recorded

* Permission to reprint this article must be obtained from William Clowes & Sons, Limited, Little New Street, London, E. C. 4, England.—The Editor.

history for at least 3,000 years. Many of its elements are described or implicit in the Old Testament narrative of David's rebellion against Saul (1 Samuel 22: 1, 2; 23: 14): "David . . . escaped to the cave Adullam . . . and every one that was in distress, and every one that was in debt, and every one that was discontented, gathered themselves unto him; and he became a captain over them: . . . And David abode in the wilderness in strongholds, and remained in a mountain in the wilderness. . . . "

Essentials Are Clear

The essentials of this situation are clear. There must be leaders who are members of, or make their way to, the directing class of their society; who may, or may not, include an outstanding personality; but who reject, or are rejected by, the rest of the group to which they properly belong. There must be a social and economic situation in which poverty and distress reach a level where significant numbers have less to lose—and may have more to gain—by abandoning their place in the social hierarchy than by remaining in it. There must be a region where such men can gather with a fair chance of resisting destruction by the forces of established authority, where they can find arms and maintain themselves from local resources, and from which they can sally forth to attack, wear down, and hope ultimately to destroy the existing regime. The authority established for the time being must be too weak to overpower the rebels or conquer the region which they dominate. The causes of discontent must include other elements besides poverty and insecurity and personal ambition in order that the struggle may not appear as a mere contest for power in which none save the participants are directly concerned. A sense of injustice must, therefore, be present, or some generalized resentment against inferiority, or some hostility to men of another race, color, or faith. Last, but by no means least, there must be rallying ideas on each side which reinforce the brittle bonds of resentment, discontent, and ambition with larger loyalties that engage men's hopes and fears, and command the discipline and the will to self-sacrifice without which no great cause can be won.

Struggles of this kind are political struggles. Their prime characteristic is that the resolution of deep and organized differences of a political nature is sought not peacefully but by the organized use of force. The most important—and the most intractable—feature of Communist insurrectionary wars is, thus, not that they are Communist, but that they are political, and that they, therefore, belong to a type of contest which throughout history has usually been self-renewing, prolonged and bitter, and often ruthless in the extreme.

In the Communist insurrectionary wars of the past three decades, the most important features of the internal situation have been agrarian and middle-class discontent, nationalism, and political weakness. The influence and combination of these factors have naturally varied from country to country. In China, great agrarian poverty has existed for centuries, its ultimate, age-old, and ineradicable cause being intense pressure of population on too little cultivable land, and has created the multitudes of landless workers or impoverished peasants from whose ranks the fighters in unnumbered peasant rebellions have sprung. The Red River delta of Indochina is another area where population pressure is severe in relation to land and food supply, and where peasant discontent is endemic. In parts of the Philippines, agrarian discontent is also deep-seated and bitter, although here the existence of large, commercially run estates and the system of land tenure are contributory factors.

Middle-class discontent is of two prin-

cipal kinds—one which results from opportunities too restricted in number or reward for the candidates who seek them or feel that they have a right to do so, and another which is the consequence of foreign rule or foreign-controlled enterprise. Both Greece and China, each with a numerous educated and middle class but with opportunities restricted by poor national economies, are examples of the first kind; Burma, under British rule, and Iran, while the most important economic undertaking in the country was in foreign hands, are examples of the second. That in suitable circumstances both kinds of middle-class discontent interact and reinforce one another is obvious; Iran illustrates this among lands which have been the scene of Communist wars by proxy, as do India and Egypt among countries which have so far remained free from this scourge.

Middle-class discontent resulting from inferior status in relation to foreigners is only one expression of Eastern nationalism, the growth of which in the past half century has been one of the major factors in the world situation. The main causes are independent of communism—although Communists have played an important if hitherto little-remarked role in fomenting and fostering local nationalisms, accelerating their growth, and making more or less successful use of their dynamic and disruptive power. In countries which have suffered Communist insurrectionary wars, nationalism has been a salutary influence.

Where nationalism has proved favorable to communism, its aid has been given indirectly—and often unwittingly—through the political weakness to which it frequently contributes. Political weakness is indeed the supremely important factor without which Communist insurrectionary wars would be impossible. Its causes are numerous and deep-rooted, and stretch far into the past. They include a perennial desire to prevent the growth of a strong central government which would bring powerful sectional interests under control or impose tax or military burdens that might prove onerous. Except Iran and China, and to a less extent Greece, the countries which have known Communist insurrectionary wars have never been strong unified states throughout history, nor have they developed the closely articulated social structure and national traditions upon which political and (given the requisite resources) military strength depend. Even in Iran, China, and Greece, forces making for division, disorder, and political weakness have been constantly at work throughout the centuries, and have been successfully checked only in the intervals when strong governments have prevailed or when their legacy of cohesion and administrative vigor has overborne inherent tendencies to division and feebleness. It is of the utmost importance that those responsible for Western policy should realize these facts, for in the effort to combat communism no error can have more far-reaching or disastrous consequences than the wholly mistaken belief that strong centralized rule belongs to the nature of things, or that it can be easily and universally established, or that the harassing problems which weakness imposes on the politically strong can then be comfortably left to others to solve.

To these underlying influences favorable to communism, other factors have been added which are due directly to World War II and to the policy of Great Britain and the United States.

In all the countries where Communist insurrectionary wars have occurred, the events of World War II weakened or shattered the structure of established government. This was as true in Iran, where Reza Shah Pahlevi was forced to abdicate and the Soviet-occupied northern provinces were cut off from the rest of the country, and in China, where the struggle against Japan enabled the Chinese Com-

munists to bring constantly increasing areas under their control, as it was in Greece, which lay prostrate under German occupation, and in Indochina, Burma, Malaya, Indonesia, and the Philippines, which were all overwhelmed by Japan. Not less important in Southeast Asia than the material consequences of defeat were the permanent loss of prestige suffered by the former white rulers of these lands through their overthrow by the Japanese, the stimulus which local nationalisms received from the fact of victory by another Asiatic people, and the fostering of independence movements by Japan, when the tide of war began to set against her, as a deliberate long-term policy which would inure to her advantage in the future.

Great Britain's support of resistance movements during the war carried further this fatal tendency to weaken the structure of postwar government. The entire policy of creating and aiding such movements as a diversionary operation of war urgently needs objective review to determine whether, and in what circumstances, its transient benefits can ever outweigh its lasting dangers. During World War II, the items on the debit side were certainly heavy. Not least among them were the opportunity and favorable conditions provided by these movements for sowing the dragon's teeth from which sprang a wide network of Communist organizations skilled in sabotage, practiced in guerrilla warfare, and ready to coalesce at any suitable moment into a major threat to the state. The loss of Greece to communism in a campaign prepared and carried to an advanced stage during the resistance was averted at the crucial instant only by armed British intervention and short but violent fighting in December 1944; the Communist tares sown during the war years were not finally rooted out until the Greek civil war ended in 1949 with victory for the West; while in Malaya and Indochina the same tares sown by the same policy during the same years still flourish.

Even more potent in contributing to the political weakness which is an essential pre-condition of Communist insurrectionary wars was the British and American anticolonial policy followed after 1945. In the case of Great Britain, although discreditable elements were not absent, this policy had the merit (so far as territories under the Crown were concerned) of applying to lands for which Britain herself was responsible, and of carrying out the self-imposed and noble ideal of conferring self-government upon peoples to whom it had long been promised. American anticolonialism, on the other hand, was misconceived, to say the least; nor can political realists—or even those who salt their idealism with common sense—find much to praise in either British or American postwar policy toward Dutch rule in Indonesia or French rule in Indochina.

Seven Main Elements

Agrarian and middle-class discontent, Eastern nationalism, and political weakness create conditions in which armed risings, rebellions, and guerrilla warfare are always possible, and may even be endemic on a small scale; they do not account by themselves for the long and formidable series of Communist insurrectionary wars which the world has experienced since 1945 (and, in the case of China, since 1927). The specific and indispensable Communist contribution to these wars can now be defined. It comprises seven main elements—a legend, opportunity, leadership, discipline, technique, and a varying measure of outside direction and foreign support.

The adaptation of the Communist legend to Asiatic peoples has been strangely neglected. To attempt here the special study which is urgently needed would lead too far afield. What is certain is that the

refinements of Communist theory have little practical relevance. The important constituents are, on the one hand, those elements of the legend which focus resentment, hatred, and envy on the individuals and groups which communism must destroy if it is to seize power, and, on the other hand, the nebulous but seductive promise of gain, advantage, and revenge which it holds out to the discontented generally. Not less important in their dynamic effects are the opportunities which communism offers to those who join its ranks and win and hold its approval. These opportunities result from the fact that communism is a truly revolutionary movement, which means that it seeks to replace one minority enjoying the possession and rewards of power by another minority, chosen not by birth or position, but by the will and ability to win power, and by success in doing so. From this standpoint, communism may be described as the twentieth-century counterpart of the Napoleonic doctrine that every soldier carries a marshal's baton in his knapsack.

Communism provides leadership not only by self-selection in a fiercely competitive struggle, but also by seeking out and training suitable recruits. Moscow has made great efforts to this end for more than 30 years, establishing in 1921 the Communist University of Toilers of the East, and also the Far Eastern University (also known as the Sun Yat-sen or Chung Shan—Sun Yat-sen's honorific name—University) with a capacity of more than 1,200 students a year, as well as the Lenin Academy—which is apparently restricted to the ablest and most promising Communist leaders alone—at a date unknown. Despite their name of "university" or "academy," all these bodies are in fact places for advanced study and training in the strategy, tactics, and technique of subversion and revolution.

By now the strictness of Communist discipline is well known, even outside Communist circles. In a complex and most difficult undertaking such as revolution even in one country—to say nothing of world revolution—the value of that discipline is obvious. What is perhaps not so widely appreciated is the contribution which discipline makes to the great internal strength of communism.

No less important as a subversive factor is the Communist development of the technique of revolution. Here the outside world can easily err if it attempts to appraise the development of this technique solely by the statements on the theory of revolution contained in the classics of communism. The published theory is not negligible; on the contrary, although clearly incomplete, its broad indication of the processes by which revolutions can be made is penetrating and in many respects true. However, what is published can be only a part of what is known. There must be a large corpus of esoteric doctrine strictly confined to a select inner circle. Much of that doctrine may well consist less of general propositions than of detailed directives for use in particular situations. Any lack of generality would, however, not necessarily—nor even probably—lessen the pragmatic effectiveness of directives, the development and adaptation of which to a changing world situation must be one of the most difficult tasks of the supreme leaders of world communism. But that such a corpus of doctrine and of temporally and politically limited detailed directives exists and is constantly being developed for fresh application is all but guaranteed not only by what is known of the working of world communism, but also by the truth (and boast) proclaimed repeatedly by Communist leaders from Marx, Lenin, and Stalin downward that Marxism is not a dogma but a guide to action.

Until the Communist victory in China in

1949, outside direction and foreign support for Communist insurrectionary wars had to be Soviet in origin. Since 1949, either the Kremlin or Peking can provide such help—or, of course, the Kremlin via Peking. That no Communist insurrectionary war would be launched without at least Soviet approval is assured by the entire structure of world communism, by the published constitution of the Comintern (only the facade of which was dismantled in 1943, leaving the main organization working as before), by the unshakable grip which the principle of "democratic centralism" enables the Kremlin to maintain on all major Communist action in every part of the world, and by the fact that Moscow unfailingly denounces any men or conduct of which it does not approve. However, although these facts indicate the general nature of the relationship, few matters are harder to establish in satisfactory detail than the amount and character of Soviet (or Chinese Communist) direction and support that Communist insurrectionary wars have actually received. In the cases of China, Iran, and Greece, no real doubt exists, although many vital details are not known. In Indochina, the Vietminh has a Moscow-trained leader and receives support from China both in troop training and in arms and supplies; latterly (May 1952) some Soviet weapons appear also to have arrived on the scene. In Indonesia, an almost classic instance of Soviet direction occurred in 1948, when an Indonesian Communist leader named Muso (or Moeso, in the Dutch spelling) returned after two decades of exile in the Soviet Union. He at once took over leadership of the Indonesian Communist Party. Soon afterward, in September 1948, a rebellion inspired and led by the Communists and supported by other left-wing groups and leaders broke out in Surakarta (Soerakarta) and Madiun (Madioen). By early November, it had been decisively crushed. On this occasion Moscow was badly informed about the local constellation of forces; but its part in this abortive rising could hardly be proved more conclusively by documentary evidence. In the cases of Burma and Malaya our knowledge is more slender; but here also Moscow's instructions may be confidently assumed to have a part in launching guerrilla warfare. In the Philippines, the use by the Hukbalahaps of the Communist term "People's Liberation Army" (or its Tagalog abbreviation, HMB) and their references to a "New Democracy" are among the evidence that establishes their connection with Moscow—and very possibly also with Peking—for anyone familiar with the present situation and policy of world communism.

Invasion of Non-Communist Territory

So much for the political characteristics of Communist insurrectionary wars. Organized Communist invasion of non-Communist territory—since the end of World War II the two examples are Korea and the Mongolian attack on Sinkiang in June 1947—is politically much simpler. In both cases the countries invaded were politically and militarily weak. In both cases strong Communist forces were available; Soviet-organized, Soviet-trained, and Soviet armed. Organization of such forces is indeed one of the earliest Communist acts on taking over a new territory. The Sinkiang incident was not sufficiently important to the West for the course of events to be established in detail, and the story quickly faded out of the news. In this affair, however, as in Korea, Soviet propaganda used an identical technique, and did its best to throw on the victims the responsibility for its own aggression.

All Communists' wars by proxy have their place in the grand strategy of Communist world revolution as that strategy is laid down from time to time by the Kremlin. Sometimes, it is true, we know

too little to determine the place of particular episodes in the general scheme; sometimes even a measure of the tactical significance of individual moves can be discerned.

The Pattern in Greece

As in the case of Hitler, the Soviet attack on Greece by means of the Greek civil war aimed primarily at expelling the West from their last outpost in the Balkans and securing Communist control over the eastern Mediterranean. In addition, a Communist-dominated Greece would outflank Turkey to the west, dominate the approaches to Istanbul through the Aegean, and bring almost irresistible pressure upon the northern flank of the straits. Intensification of the Greek civil war in 1947 aimed partly at stultifying the Truman and Marshall Plans by preventing Greece's economic recovery and military revival. The termination of the civil war in 1949 was due largely to the Yugoslav defection, and to the difficult tactical situation created for Communist guerrilla forces in the Greek northern frontier areas when Yugoslav territory could no longer be used for retreat, rest, and reorganization, and when the loss of Yugoslavia cut land communications between the other Soviet Balkan satellites and Albania.

Azerbaijan and Kurdistan

The Azerbaijan and Kurdish risings of 1945 also had far-reaching strategic aims. They prepared the way for a Communist *coup* in Iran, and, therefore, for Soviet expansion toward the Persian Gulf; if successful, they would have enabled Turkey to be outflanked from the east and opened the classic invasion route from Persia via Tabriz and Bayazit (thus making possible a two-pronged attack on the key position of Erzurum—the other prong being the no less classic Russian invasion route Leninakan-Kars-Erzurum); in conjunction with the Communist attack on Greece they threatened to cut off Turkey from Western aid except via Alexandretta and the difficult communication routes northward across Anatolia. It would appear that the Azerbaijan and Kurdish risings were called off because in 1946 the Kremlin felt it had not yet exhausted all possibilities of peaceful expansion, and because the next phase of Soviet strategy was not yet prepared.

China—A Major Preoccupation

China has obviously been a major Soviet preoccupation from the October Revolution onward. Two examples will suffice to show the response of Chinese communism to major decisions of Soviet world strategy. The first was the reversal of the all-out Chinese Communist attack on the Kuomintang after the Seventh World Congress of the Comintern in 1935, and the subsequent and successful effort to achieve a Chinese "united front" against Japan. This policy suited Soviet requirements by diverting Japan from Siberia and plunging her into the morass of major war with China. The second was the Soviet decision to hand over Manchuria to the Chinese Communists in 1945 and 1946, a decision from which the defeat and overthrow of the Chiang Kai-shek regime ultimately followed. This decision was taken despite its inevitable and foreseeable immediate consequences for Soviet relations with the West; although it should be added that the Kremlin's calculation of the gains which this step would bring have so far proved only too well founded.

Invasion of Sinkiang

The Mongolian invasion of Sinkiang in June 1947 has a much smaller place in Soviet strategy. There are two possibilities. Either it was launched to assist the Chinese Communists shortly after Kuomintang forces had captured Yenan (March 1947) at a time when such a diversionary

operation appeared necessary, or at least helpful; or else it was what Mongolian (and Soviet) propaganda claimed at the time—a border foray, which, however, succeeded in rounding off Mongolian territory (which is completely dominated by Moscow) by annexing a frontier region which was thought to contain mineral deposits, and which no Chinese government would yield except under extreme pressure. The facts available do not permit decision between these alternatives.

Burma and Malaya

The opening of the Communist guerrilla operations in Burma and Malaya was apparently decided upon at the regional Congress of the World Federation of Democratic Youth held in Calcutta in February 1948; the relevant Soviet instructions were transmitted from Moscow late in 1947; and the Kremlin's own decision must, therefore, have been taken somewhat earlier—perhaps before the Warsaw Congress of September 1947, at which the Cominform was launched, perhaps between that date and the end of the year. We do not know the considerations which led to this decision; but among them the purpose of hampering the Truman and Marshall Plans undoubtedly bulked large; the usefulness of aiding the Greek civil war by opening diversionary operations in Southeast Asia cannot have been overlooked; and a similar diversionary aim must have been sought if, as seems probable, the Berlin blockade was already at least tentatively in preparation.

Communist disorders in Burma and Malaya—and also in Indochina, Indonesia, and the Philippines—had many other purposes as well.

The immediate achievement of Communist revolution in these countries was not necessarily among them. Politically, they would further weaken already feeble regimes in a manner certainly advantageous to communism in the future. Economically, such disorders would be helpful to communism by preventing the recovery of countries important both in themselves and in their relation to the economy of the West as a whole, by striking at major sources of the world's rice supply (and thus incidentally bringing pressure on India), and by keeping Great Britain's dollar-sterling position under strain through pressure on Malayan rubber supplies.

Strategically, aims more complex and more far reaching were sought. Burma would open the door to Communist pressure on Assam and East Pakistan. By tying down forces otherwise available for use elsewhere, guerrilla operations in Malaya would affect Great Britain's world position generally and would reduce the West's defensive strength in Europe. The Philippines are strategically important in relation to Formosa; Hukbalahap operations in Central Luzon would absorb most of the energies of the Philippine Army, and the free use of Luzon by any American forces based there would be hindered or prevented.

Indochina and Korea

Indochina and Korea offer even larger prizes. As the Japanese demonstrated during World War II, Indochina is the key position in the strategic geography of Southeast Asia, and its fall would expose Thailand, Malaya, and Burma to tremendous Communist pressure.

Korea is no less vital as the gate to Japan across the narrow Korea Strait; with the whole of Korea in Communist hands as well as Vladivostok and Port Arthur, the defense of Okinawa and Formosa would become more difficult; and Japan would face envelopment both from the south and from Soviet forces based on Sakhalin and the Kuril Islands to the north. Korea and Indochina also affect adversely the entire military resources of the West. Both France and the entire North Atlantic

Treaty Organization defense structure are weakened by the constant drain to Indochina of officers and noncommissioned officers needed to train and provide cadres for fresh French divisions in Europe. American military, naval, and air strength is similarly diverted from Western Europe, the most vital of all the areas exposed to direct Soviet attack; and the diversion is the more serious since American defense plans provide no margin for the forces which continued operations in Korea demand.

The Important Question

What can be done about Communist wars by proxy? It should be recognized at once that there is no panacea, no easy answer which we have somehow just overlooked. All Communist wars by proxy, the insurrectionary and the invasionary alike, are *political* wars. If any doubts about this existed, the results of the screening of Communist prisoners at Koje should remove them. Political wars by their very nature are long wars, wars which, beyond a certain point—and a movable point at that—cannot be shortened. The human facts can be stated in the simplest terms. Some men are so self-willed, so obstinate, so mulish by nature that only when they have butted against a brick wall until their heads are bloody and their skulls fractured or broken will they accept the fact they must put up with it or else find another way through or around. In political wars, therefore, suffering, attrition, and exhaustion are not mere accidents; they belong to the very essence of the conflict; only through the fearful price that they impose, the brutal lessons that they teach, will refractory and rebellious men learn that the game they are playing is not worth the candle—and in some cases apply this lesson by seeking the road to reconciliation.

None of this means or implies that the West, in combating Communist wars by proxy, should simply be brutal or ruthless also, or should think that victory can be won by terror alone, or should do anything that will needlessly prolong the struggle. Nothing could be further from the truth, or less civilized or less Christian in the true sense, or more certain to bring a fearful nemesis in its train. However, what must be done, and done without flinching, is to recognize and acknowledge frankly what terrible realities we face—and then try to educate a reluctant public opinion to the same recognition and acknowledgment.

Another preliminary is also important. The Communists claim, and with much truth, that they have a simple, unique, infallible technique, which must assure them victory. What Communists really seek—and the Utopian visions of the rare idealists among them cut no ice in practice—largely justifies this claim. Communists are entitled to a certain complacence about their technique because their real aim is destruction of the existing social order and its replacement by a form of tyranny no less ancient or evil in its true nature because it employs the material resources of modern technology and parades in the hypocritical robes of self-proclaimed virtue. Quite a simple technique is adequate for destruction. An axe will cut down a sapling, an oak, or an entire forest; whole armies can be, and have been, butchered with spears and swords alone. However, the West can oppose no single or simple answer to the Communist claim because the West stands for the cause of life in all its abundance, variety, and freedom—and is worth supporting only because, and in so far as, this is truly its cause. However, no man can make even one acorn grow, let alone a forest. All that lies within human power is to provide conditions in which life can flourish and then wait patiently for it to do so. And what is true of individuals is true *a fortiori* of societies:

Paul may plant, and Apollos may water, but it is God Who giveth the increase.

So much by way of preface. We may now attempt to apply these principles and our earlier analysis to find answers to Communist wars by proxy.

"The fundamental problem of Leninism," Stalin said in a famous passage, "is the problem of power." The same truth applies to the West. The fundamental problem of democracy, the fundamental problem of the West in the present critical struggle, is the problem of power. Since power is always relative, whatever increases our own power or diminishes the power of our enemies brings the West a step forward on the road to victory.

We can lessen the power of our enemies by killing or exhausting them; by cutting off, injuring, or otherwise reducing their food supply; by destroying their arms production or closing the routes by which weapons and munitions reach them; by sowing division and dissension in their ranks; and by killing, harrying, and discrediting their leaders. To kill and exhaust them means bringing them to battle in circumstances favorable to us; which in turn implies that the West must never stand on the *strategic* defensive, although *tactical* defense must clearly often be combined with *strategically* offensive or counteroffensive operations. To cut off or reduce their food supply means preventing them from getting food from areas nominally in our control (this is important in the Red River delta of Indochina); forcing them from good, fertile land into poor regions where crops are bad; and driving them hard, particularly in the harvest season: air attack behind the enemy lines might be helpful for this. In East and Southeast Asia, no significant enemy arms production is known to exist except in Manchuria, perhaps in certain other parts of China, and in Siberia and the Soviet Far East. To attack any of these centers would risk opening a major phase of World War III, and is, therefore, precluded so long as fighting is confined to Communist wars by proxy. Closure of the routes by which weapons and munitions reach the enemy is impossible in Korea for the same reason; is difficult in Malaya (where some gunrunning takes place along the Thailand frontier); and is of the first importance in Indochina, where recovery of control over the frontier with China should be a major early objective.

The remaining items listed in the preceding paragraph—sowing division and dissension; and killing, harrying, and discrediting the enemy leaders—are either consequential upon the other efforts suggested (for example, division and dissension will certainly result from defeat and heavy casualties, or from serious curtailment of food supplies; such casualties should also in time entail the death of leaders) or else primarily political. These and other necessary political measures lead to the most difficult part of the task—a part thick-set with obstacles and barbwired with vicious circles and spirals.

A Twofold Problem

The problem is twofold—to weaken our enemies, and to strengthen ourselves; and both parts are interconnected. As regards our enemies, the principle of solution is simple: dire penalties extending to summary execution for the obdurate few; inducements and incentives to surrender or transfer their (not very reliable) allegiance for the wavering or malleable many. This differentation of policy is important. To attempt to win over the stubborn, dyed-in-the-wool Communists, whether their fanaticism results from conviction, from block-headedness, or from ambition, is sheer waste of time and energy. On the other hand, to attempt to terrorize the enemy masses—many of whom are in his ranks only because they have already been terrorized by him—is a policy which

can never be successful in Western hands (terror did not always work even with the ferocious Mongols) and must end by giving ammunition to Communist propaganda and consolidating enemy strength.

Here again the problems that must be solved are closely interlocked. Success in guerrilla warfare (and in trapping and killing leaders) depends above all on intelligence: on securing intelligence of the enemy's plans, movements, and whereabouts, and on preventing him from obtaining similar intelligence about our own. Intelligence requires the solution of certain technical problems; in Malaya, for example, Chinese-speaking officers are needed, and the work must be done in ways adapted to Chinese customs and psychology, and not according to the formalized routine of a rigid bureaucratic system. Far more important, however, intelligence is impossible unless those supplying it are secure; but security requires that law and order shall be firmly established, which, in turn, leads to the social and political factors that made the growth and spread of communism possible in the first instance.

We are, thus, back to the fundamental problems from which this analysis started. How are agrarian and middle-class discontent to be removed? How is Eastern nationalism to be satisfied without leading to politically fatal fragmentation? How is political strength to replace the fearful political weakness from which all the East and Southeast Asian theaters of Communist wars by proxy—Korea, Indochina, Malaya, Burma, Indonesia, and the Philippines—suffer without exception? How, for instance, can the tension in Malaya be resolved which results from the Chinese desire for land, and the Malay fear that satisfaction of this desire would have dangerous consequences for the Malays who are the peninsula's original inhabitants? Or how can Indochina, which has known centuries of conflict between its peoples, other centuries of conquest from China and India, and which even under French rule lacked a really vigorous centralized administration, develop into a strong, unified state?

There can be no easy answer to these questions either. They also carry us back to an earlier part of this analysis which in effect pointed out that there are no answers in general terms to the problems created by life and growth. However, that does not mean that there are no answers at all, or that responsibility for finding them rests in other hands than those of the Western powers—Great Britain, France, and the United States first and foremost.

The clue lies in two facts. The first is that communism, because it brings opportunity to some, threatens others—and a larger number. The second is that for the West today, facing as it does the gravest threat to its existence in history, the fundamental problem is the problem of creating and maintaining the power without which it will surely perish. The threat which communism brings to the many provides a means of rallying them. The need to create the power with which to oppose the Communist menace successfully, like the parallel duty of rallying the multitudes in East and Southeast Asia whom communism endangers, must alter Western policy toward the new states of this area.

A Start Has Been Made

Economically, a beginning has been made with the Colombo plan and the Point Four program. Although small and woefully inadequate, these are a beginning. Politically, the West must abandon the idea that the grant or promise of independence to Southeast Asia will enable the states of that region to stand on their own feet and the West to wash its hands of them. The old colonialism may be dead; but the responsibilities of common surviv-

al in a perilous world remain—and the dangers which West and East face alike must inspire new methods of co-operation as they already provide strong levers with which to move the dead weight of age-old tradition and new-fangled but unattainable dreams. Militarily, the West must press for the creation of far larger local forces than have hitherto been contemplated. One of the main causes of the success which the Communists have achieved in the Asiatic wars by proxy is the wholly inadequate scale of the armed forces that have opposed them. Forces of the size required, however, will greatly overtax the relatively feeble East and Southeast Asian economies (it should never be forgotten that the excessive burden imposed by the Chinese Nationalist armies on the impoverished economy of China was a main cause of the downfall of the Chiang Kai-shek regime); the arms and weapons required by these forces will, therefore, have to be supplied by the West; nor can the idea of a financial contribution toward pay and maintenance be rejected out of hand.

There are serious objections to all these proposals. Many are unpalatable in themselves; all suffer from lack of precision and detail, but necessity is a stern master. What matters now is not that we should have large-scale maps of the paths along which we must advance, but that we should have the faith, and above all the will, to press forward.

The Swiss Are Ready

Digested by the MILITARY REVIEW from an article by Walter Hacket in "The Christian Science Monitor" (United States) 28 January 1953.*

IN 1940, following the fall of France, four crack divisions of Nazi troops were massed along the Rhine in the Black Forest area, awaiting Hitler's command to invade Switzerland. On the other side of the river a smaller Swiss Army readied itself.

During the height of this emergency, in accordance with custom, the Swiss commanding officer held a meeting open to all ranks. A private posed this question: "There are 40,000 Nazis and only 20,000 of us. If they attack, what will be our strategy?"

His commanding officer replied: "It means that every one of us will have to shoot twice."

At the last minute Hitler's intelligence heads talked him out of the move, pointing out that the advantages gained would be offset by a staggering loss in men, ammunition, and supplies. Intelligence also pointed out that Switzerland, in the event of a successful invasion, would go under ground and throw up an active resistance front.

That crisis and a similar one in 1943 passed. The war ended, and Switzerland demobilized its Army of more than half a million men and a supplementary women's corps.

Switzerland, not a member of the North Atlantic Treaty Organization, has not abandoned its policy of neutrality, which began 150 years ago. In the midst of its present prosperity and the highest living standard in all Europe, the Swiss are looking eastward, ever watchful of the increasing shadow of the Soviet bear which sprawls only a few hundred miles away in Germany and Austria. The bigger the shadow the more accelerated the defense preparations.

Switzerland is anxious that the Soviet

* Permission to reprint this article must be obtained from *The Christian Science Monitor*, One Norway Street, Boston 15, Massachusetts.—The Editor.

Union should know at least the basic framework of Swiss defense plans, now in process of implementation, a blueprint calling for mechanizing a sizable part of the minuteman army. The Swiss are enlarging, improving, and smoothing their World War II dress-rehearsal pattern. The present stepping-up process gained impetus in 1950, when 45 percent of the Government's budget went for defense.

In keeping the Soviet Union informed of strategy, Switzerland sums up its assets, pointing out that it has a population of 4,700,000 living in an area of 16,000 square miles, much of it uninhabitable mountain peaks.

Industry absorbs 45 percent of its workers, agriculture 22 percent. Practically the only natural resource is water power. The chief item that the country has to sell, the Swiss carefully underline, is good will.

However, let the Soviet Union attempt to invade, Switzerland adds, and in less than 48 hours the nation could activate 800,000 men, or the largest trained army in Europe.

The physical make-up of Switzerland's Army is unlike that of any other European nation. Its so-called Regular Army consists of 340 officers, 110 noncommissioned officers, who serve as instructors, and approximately 2,000 maintenance guards.

The highest peacetime rank is full colonel, and only in war years does the Army have a general. During World War II Colonel Henri Guisan, now retired, was commander in chief. In event of war, his successor would be elected by the seven-man Federal Council, which runs the country.

Every Swiss male between the ages of 20 and 48 must do active military service, which includes 3 weeks of training every year. In the event of mobilization, the age spread is 18 to 60, and the only persons excused are a few key Government officials, criminals, and the handicapped.

Army ski troopers engaging in practice rescue operations in avalanche control during a winter mountain training maneuver in Switzerland.—Photograph by Robert Towers.

Between the ages of 20 and 36 every able-bodied Swiss is in the elite force; from 36 to 48 he serves in the combat force; and from 48 to 60 he belongs to the reserves.

A Swiss living in a foreign country and unable to return for his yearly field training pays a military tax amounting to 1½ percent of his annual salary, plus 1½ percent of any personal property income, such as real estate.

During his 3-week training duty, the Swiss soldier receives 2 francs a day (approximately 46 cents), progressively more if he is an officer, and his meals. Employers make up most of the income lost in absence from a job. For the self-employed, there is a special Government fund which does the same thing.

When the Swiss soldier finishes his annual training he returns home and hangs up his uniform, ready for further use. The Swiss likewise carries home his rifle and 24 rounds of ammunition. If a mobilization order comes he changes into uniform, puts his gun on his shoulder, and reports to his unit, which for the sake of efficiency mobilizes within a few miles of his home.

The immediate "on-call" Swiss Army consists of four corps, nine divisions, three independent mountain brigades, and a fortress brigade. The Tactical Air Force is made up of 500 fighter planes. There are no bombers.

Should the Soviet Union invade, all key tunnels, passes, bridges, roads, and rail lines would be destroyed; the Rhine River in the Basel area would be clogged and mined. The loss of Switzerland's vital road and train tunnels alone would make it extremely difficult for a large-scale Soviet force to storm in.

Communist paratroops would find the towering and jagged Alps poor landing points. Chances are that a man dropped atop one of them would never be rescued. Drop parachutists on the lower peaks and they would be harassed by crack Swiss mountain troops, guerrilla specialists who know the areas as well as their own flower-filled meadows.

If the Soviet Union should move, aside from using Switzerland as a route into France and Italy, one of the related things the Communists would be after is the country's industrial plants and scientific laboratories. In the electronics field Switzerland is generally conceded to be strides ahead of any other European nation. All this would make a rich prize for the Kremlin.

Let an invasion pierce the outer rim of defense, and the Army would have to fall back on its natural defense line high in the Alps, allowing the rest of the country to suffer occupation. The home guard would take to the mountains and harry the invaders.

The inner defense area is approximately the same one slated for emergency use during World War II; its central point is in the area that lies between the St. Gothard and Simplon Tunnels. In addition, the Swiss version of the Maginot Line extends from the Lake Geneva area to the Austrian border. Numerous pillboxes are 12,000 feet in the air, antitank obstacles are sunk along strategic highways, ammunition of every description is stored, and enough food and general supplies are hidden underground to sustain troops for a 5-year period.

This inner defense ring is so constructed that it would take only a comparatively small force to defend it; the exact number is one secret the Swiss will not allow the Soviets to learn.

If the Soviet bear decides to burst into Switzerland and lumber across the Alps, the Swiss feel that they will be ready for him. However, by the time he finishes the trip he may wonder if the trip was worth the effort.

Moscow, 1812 and 1941: A Comparison

Digested by the MILITARY REVIEW from an article in "The Journal of the Royal United Service Institution" (Great Britain) November 1952.

HISTORY has a tendency to repeat itself, although no one military operation is a blueprint for another. Nevertheless, a comparison of the German invasion of Russia in 1941 with Napoleon's campaign in 1812 shows that failure to attain the objective in both cases was due to similar reasons or causes, military and political.

Both invading armies crossed approximately the same start line on the same day of the year. The Emperor reached Moscow in mid-September too weak, and stayed too long in the hope of gaining his political objective. In 1941, Hitler hoped to solve the time and space problem by a *blitzkrieg*, and succeed where Napoleon's forced marches had failed. His generals were not so sanguine. The Germans, in spite of their mechanization and the marching capacity of their infantry divisions, took much longer than Napoleon to reach the outskirts of Moscow. A comparison of each advance, set out in the chart on page 89, is of considerable interest.

The difference in character, armament, and equipment between the Grand Army and Hitler's masses serves as an illustration of the fact that the fundamental principles of war are constant. It will also be seen that the factors and events which led to the failure of both campaigns are strangely similar. They may be summarized as follows:

1. Both plans aimed at the rapid destruction of the Russian armies, and were agreed as to the vital importance of Moscow.

2. Both armies faced time and space problems intensified by the climate and bad communications.

3. Serious administrative failures affected each campaign.

4. There was in each case a halt and indecision *en route*, at Vitebsk and Smolensk in 1812, and at Smolensk in 1941.

5. The Russian command was not brilliant in the early stages of either campaign but made use of space.

6. The Grand Army and the Germans had the prestige of recent sweeping victories. However, Napoleon underestimated his opponent's determination; the German counterintelligence underestimated the potential strength of the Russian forces and the quality of their armor.

7. Each had to contend with partisans and "scorched earth," although the latter was probably less effective in 1941 than in 1812.

Both these campaigns, it is suggested, are of considerable interest at the present time. The following outline of events and decisions, together with some reflections, are designed to amplify the most important similarities summarized above and to serve as an introduction to more detailed study.

Napoleon: 1812

At the outset, the main Russian armies under Barclay de Tolly (127,000) and Bagration (66,000) formed two groups close to the frontier, the northern army under Barclay being much extended. This was due to Napoleon's initial concentration which threatened both the areas north and south of the Pripet Marshes. The extreme wings of the Grand Army were covered by a corps on either flank, Austrians on the right, Prussians on the left.

Napoleon advanced rapidly, his main thrust directed on Vilna, his intention being to turn the Russian right flank and maneuver against their communications with Moscow. Barclay, however, refused battle. Bagration drew nearer to the main

army, but as he was not in touch, Napoleon planned to destroy this detachment in detail. Owing to the incapacity of Napoleon's brother Jerome, however, the project failed and the Russians escaped. Still withdrawing, both Russian armies eventually succeeded in uniting near Smolensk.

At the end of July, after another lost opportunity at Vitebsk, the Grand Army had a few days' rest. During this pause, Napoleon, showing unusual indecision, argued with his marshals. Berthier, Duroc, and Daru were against a further advance. They urged that the Russians would not make peace even at Smolensk, Duroc insisting that the enemy was luring the Grand Army to destruction in the interior. Daru emphasized the already disastrous supply situation. However, Napoleon decided to go on; the leading troops reached the outskirts of Smolensk on 16 August and, after a sharp action, entered the burning ruins of the town on 18 August. Again an outflanking movement failed to destroy the Russian forces or cut them off from Moscow. Several days later, when it appeared they were about to make a stand astride the Moscow road, the main body of the Grand Army advanced again, but the Russians avoided battle and retreated. They had, by a system of evasion, succeeded in prolonging the period of resistance, during which the invader's preponderance in strength was reduced and his line of communications, already threatened on both flanks, was stretched. The Russian armies had suffered losses, but they were still intact and likely to be reinforced.

The Emperor, who had crossed the Niemen with 360,000 men, began operations against Smolensk with 185,000. Battle casualties and detachments were not the sole reason for this; much wastage had accrued from sickness, straggling, and desertion. Since early July the troops had suffered from the intense heat, shortage of water, and choking dust. However, that was not all. The rudimentary medical service lacked drugs for the sick and even dressings for the wounded. The supply service soon broke down, the wagons could not keep up with the Army. Once the rations carried on man and horse at the outset were exhausted, everything had to be obtained by foraging or marauding. Posts and hospitals along the line of communications were expected to subsist in the same way. Not only was this bad for discipline, but the foraging parties and marauders fell victims to the partisans.

Smolensk to Moscow

After the battle for Smolensk, Napoleon the general must have had grave doubts as to the possible success of the enterprise, but Napoleon the statesman had still to secure a settlement. He sent a letter to the Czar offering to treat for peace. There was no reply. Two courses were now open to Napoleon, either to renounce the task as impossible or to go on in the hope that by the occupation of Moscow the political objective could still be attained. The marshals were disillusioned and uneasy; even the dashing Murat begged the Emperor not to go on. Napoleon the statesman would not stop, so the hungry Army, reduced to 156,000, struggled on from a burned-out, pillaged wilderness through an avenue of burning villages and farms.

Marshal Kutuzov, who replaced Barclay as commander in chief at the end of August, continued the withdrawal. Reinforcements brought his force up to a strength of 120,000, and he occupied the previously selected position at Borodino with the intention of making a stand in defense of Moscow. Napoleon gained contact with the position on 5 September, after a halt to close up. However, he was only able to concentrate 134,000 men for the battle.

Borodino (6-7 September) was not one of Napoleon's masterpieces. His purely frontal attack cost 28,000 casualties, although the artillery fired 100,000 rounds,

and the result was not decisive. Breaking his own precept, Napoleon had retained his Guard in reserve. This picked force of 19,000 men, thrown at the exhausted Russians on the late afternoon of 7 September, might, indeed, have turned the battle into a smashing victory and peace at Moscow.

On 8 September, the Russians, whose losses had amounted to 40,000, began to withdraw from the battlefield, moved slowly through Moscow, and then *south* toward Kaluga. The Grand Army followed at Smolensk. On his right wing were 34,000 (Austrians) at Brest Litovsk; on the left from Riga to Dunaberg were 25,000 (Germans) and 17,000 at Polotsk. Both wings were threatened by Russian forces superior in numbers to these detachments. Napoleon considered various courses of action and, about 9 October, came to the conclusion that retreat *via* Smolensk offered the only possible escape unless the Czar gave in.

In the meantime, Kutuzov, reinforced to a strength of 110,000, concentrated

INVASION TIMETABLE

	Napoleon	*Hitler*
D-day	22 June	22 June
Start Line	Niemen River	Brest Litovsk-Tilsit
Minsk occupied	8 July	10 July
Smolensk reached	16 August	16 July
Smolensk cleared	18 August	7 August
Move on to Moscow	25 August	2 October
Check outside Moscow	2-8 September (includes battle of Borodino, near Mozhaisk)	15 October, Mozhaisk taken. Pause of 3 weeks. Final advance stopped at Klin, 30 miles west of Moscow, on 5 December.
Moscow reached	14 September	
Retreat started	19 October	Russian counteroffensive, 6 December, forced withdrawal.

up, entering Moscow on 14 September. Some 2 days later the city began to burn.

Napoleon was in a quandary. He had reached Moscow, but was too weak to keep himself there, and the Russians made no overtures for peace. On 20 September, he wrote again to the Czar proposing negotiations and, on 5 October, got into touch with Kutuzov. There was no response, which is not surprising. The Grand Army was deployed in the area Riga-Moscow-Brest Litovsk; the line of communications from Moscow to the Niemen measured 550 miles. The Emperor had 95,000 men in Moscow, 5,000 at Mozhaisk, and 37,000 some 40 miles *southwest* of Moscow, watched by Murat. Every single day that Napoleon remained in Moscow could only be of advantage to the Russians, who were careful not to give the impression that they had no intention of negotiating. This deception, however, could not be maintained indefinitely, so on 18 October the Russians attacked Murat's detachment. The next day, the retreat from Moscow commenced; the first frost came on 27 October, and a week later the snow began to fall. Kutuzov's pursuit was parallel, not direct, until just before the Battle of Beresina.

Hitler: 1941

The outline plan for the invasion of Russia, contained in *Oberkommando der Wehrmacht* Directive No. 21, stated the object as: "To defeat Soviet Russia in one rapid campaign." The intention given was: "The mass of the army stationed in Western Russia is to be destroyed in bold operations involving deep penetrations by armored spearheads, and the withdrawal of elements capable of combat into the extensive Russian land spaces is to be prevented."

Three army groups—Southern, Central, the strongest, and Northern—were to advance from Poland and East Prussia. The first, on the main axis Lublin-Kiev, would advance south of the Pripet Marshes and after deep penetration roll up the enemy forces along the Dnepr River. The main thrust would be made north of the Marshes by the Central and Northern Army Groups, which had the task of destroying the enemy forces in White Russia, and taking Leningrad, after clearing the Baltic states. The directive continued:

> Once the battles south or north of the Pripet Marshes have been fought, the pursuit is to be undertaken with the following objectives:
>
> *In the south*, the rapid occupation of the economically important Donetz Basin.
>
> *In the north*, the speedy capture of Moscow.
>
> The capture of Moscow would be a decisive victory both from the political and from the economic point of view; it would involve, moreover, the neutralization of the most vital Russian rail center.

Success, as in 1812, depended on a quick advance to be followed in this case by vast encirclements *west* of the Dnepr. Hitler believed the campaign would be over in 10 weeks, when all the opposing Russian forces would have been destroyed.

At first all went well. Von Bock's Central Army Group, its right moving through Brest Litovsk and left *via* Vilna, converged on Minsk capturing some 300,000 prisoners. After turning the mythical Stalin Line on the Beresina, Von Bock's advance guards reached the outskirts of Smolensk on 16 July. A gigantic tank battle followed in which the German losses were unexpectedly heavy. It was not until 7 August that Smolensk was captured, after which Von Bock was forced to pause and refit.

Delay at Smolensk

Hitler began to interfere even before the fall of Smolensk. His refusal to give priority to Von Bock's group had prevented a double envelopment as at Minsk. This dispersion of forces disturbed the Army High Command. However, in the meantime, the reinforced Northern Army Group pushed on and, by 20 August, captured Pskov and Narva.

On 17 August, Von Brauchitsch again urged Hitler to sanction a resumption of the advance on Moscow with maximum strength before the summer ended. The *Führer* had other ideas, and as a result Von Bock had to detach two armies, including Guderian's panzers, to co-operate with the Southern Army Group in a pincer movement on Kiev. This operation, in which the Germans claimed an astronomical number of prisoners, was not completed until 20 September. In spite of the lateness of the season, Hitler then ordered the resumption of the drive on Moscow and the return of the formations loaned by Von Bock. However, at the same time, he insisted on the continuation of both the northern and southern offensives.

Von Bock's offensive with 48 infantry and 12 armored divisions started on 2 October on a wide front. Mozhaisk was taken on 15 October, but there the advance faltered. With the autumn rains, mud became a limiting factor. The supply vehicles, on which so much depended since the converted railways had not caught up, were bogged in the mud of the Russian

roads. Had they been tracked vehicles the story might have been very different. The troops were exhausted, rations were short, and no replacements of any kind arrived.

Winter Outside Moscow

Hard frost came early in November, then the snow. Once it became apparent that the onset of winter prevented a quick decisive victory, Von Brauchitsch advised withdrawal to a defensive line where the troops could be properly sheltered for the winter. Both the commanders of the Northern and Southern Army Groups urged withdrawal back to Poland. Von Bock, however, feared that a winter retreat would involve disaster. Hitler decreed that the offensive would be maintained.

The advance was resumed, only to bog down on 5 December some 30 miles from Moscow. On 6 December, a Russian counteroffensive in unexpected strength opened, and the Germans were forced to withdraw to their advanced bases, converted into "hedgehogs." The continuous defensive fighting during the winter caused a heavy loss in men and material. Equipment could be repaired or replaced, but the experienced soldiers could not be replaced, thus, the cutting edge of the German Army became blunted, and its temper was never the same again. The commander in chief, Von Brauchitsch, the three army group commanders, and Guderian were removed; the new "War Lord" took the reins into his own hands.

Reflections

The combination of space, climate, and bad communications was undoubtedly a contributory factor to the failure of both campaigns, particularly in its effect on supply and transport. There were, however, violations of the principles of war, failures in execution, and a lack of foresight in each case.

The policy of using space by retreat into the interior was not deliberately adopted by the Russians in either campaign; they were forced into it. Nevertheless, an invader faced with such evasion, and unable to gain a decision, suffers from the "diminishing power of the offensive" as he proceeds.

Clausewitz, referring to Russia, remarks: "It is no country which can be regularly conquered. Such a country can only be subdued by its own weakness and by the effects of internal dissension. In order to strike these vulnerable points in its political existence, the country must be agitated at the very center."

The experience of World War I shows this view to be correct, and there is no doubt that the German General Staff was aware of it.

Napoleon's original concentration was brilliant. During the advance, however, failures in execution occurred, and it soon became apparent that the known difficulties had been underestimated and that living on the country would not prove a substitute for a proper supply system. Napoleon was unable to control so large an army in detail, and his subordinates failed when not under his close supervision. Thus, more than once maneuvers which might have resulted in decisive victory failed. Added to this, he had lost his former energy and had become much concerned with the detailed administration of his Empire. With affairs in Spain going from bad to worse, he was not in a position to sustain a long defensive war, especially as time was on the side of the Russians. Therefore, in spite of protests, he went on from Smolensk and gambled on the fall of Moscow bringing peace. It did not—the Russian Army was still in-being.

The German campaign of 1941 was an amazing performance. After the first month, however, the effect of space and bad communications began to make it-

self felt and the armored spearheads were sometimes delayed until the marching divisions came up to "close the bag." Then troubles over supply and transport and the shocking mistake over clothing followed.

The delay at Smolensk was fatal. Hitler acted contrary to the advice of his commander in chief, and in so doing flouted the principles of concentration and maintenance of the objective. The fact that Moscow was the political center, an important industrial area, and, above all, the vital Russian rail center made it the main objective, to the early capture of which everything else should have been subordinated. Even had the Russians escaped decisive defeat in its defense, the neutralization of the rail center would have so affected the flexibility of their forces that such operations as the Stalingrad counteroffensive would not have been feasible.

Neither Napoleon nor Hitler achieved their political aims because neither succeeded in destroying the Russian forces and their will to resist. These results cannot be attributed entirely to Russian space and climate, although these were important factors, as were the determination and fighting qualities of the Russians themselves. The mistakes made by the invaders, similar in many respects, were surely the main reason for their failure.

Napoleon the emperor prevailed over Napoleon the general. Hitler the politician overruled his commander in chief. One lost an army, mostly composed of allies, the other, having destroyed the power and prestige of the German General Staff, eventually drove the entire *Wehrmacht* to destruction.

The Weapons of the West versus the Manpower of the East

Translated and digested by the MILITARY REVIEW from an article by Lieutenant Colonel F. O. Miksche in "Revue de Defense Nationale" (France) December 1952.

THE "unconditional surrender" of Germany upset the balance of forces in Europe; that of Japan the balance of forces in Asia. In both cases, the power of our former enemies was destroyed, but their hegemony has been replaced by a dangerous Soviet imperialism.

Up until 1918, Europe was, from the geopolitical point of view, divided into three great regions: western, central, and eastern. On Central Europe, which comprised Germany and Austria-Hungary, devolved the role of maintaining the balance between the East and the West. However, since that time, Central Europe has practically disappeared; the Danubian Empire has been destroyed; its nations were Balkanized by the treaties of 1918-20; and Germany was excessively weakened in 1945—whence the loss of balance and a Europe divided into only two spheres: the East and the West.

In the two world conflicts, hatred overruled the sensible reason of statesmen; after the wars, propaganda became the foundation of official policy. "To be or not to be: that is the question"—the great problem which confronts Western civilization today.

War or peace: this is the alternative that we are facing today, but, paradoxically there is almost no difference between these two terms.

Let us suppose that agreement has been reached with the East which the West has been desiring so greatly. In the present state of affairs that would mean the domination of communism over Eastern and

Central Europe and over a very large part of Asia. In other words, it would mean a recognition of the *status quo*. Would it be possible for Europe to survive, out of balance as it is, under the suffocating weight of a pan-Slavic empire extending from the Elbe and the Danube to Hong Kong?

If Europe were lost, what would be the fate of America, isolated and alone as it would be in the midst of a communistic world?

General Observations

A third world war would place facing one another two forces which present the greatest contrast, not only in their social structures but also in the majority of other respects. The East (the Soviet Union and her satellites) is isolated, geopolitically, between the Baltic, the Arctic Ocean, and the Pacific. As for the Western powers, they have absolute control over the great sea routes and, consequently, over the principal routes followed by world commerce. The Soviet Union and her satellites form, geopolitically, a compact mass, while the Western powers are dispersed and separated from one another by vast oceans and, what is worse, by different views with respect to a number of vital points. Economically and technically more advanced than the East, this should be a guarantee that in the long run the West would retain the initiative, not only on the sea but also in the air. On the other hand, the East, although technically the weaker, would dominate in point of numbers. Therefore, a third world war would be fought between a geographically isolated, great land power and a coalition of more developed air and naval powers. From these contrasts may be deduced the main strategic characteristics of an eventual clash between the East and the West.

The Soviets would have to make use of their numerical superiority for the seizure of naval, land, and air bases from the Western powers, with Gibraltar and Suez as strategic objectives for the purpose of closing the Mediterranean and expelling the allies from it. This manifestly offensive strategy would, nevertheless, in the end, end in defensive action. Whatever may be the expansive force of the East, once its armies have reached the coast, it has exhausted its possibilities of offensive action; it cannot reach a strategic decision. Numerical superiority permits only the occupation of a country; it cannot ensure control of the sea or the air, both of which would be essential for final victory.

Inferior in numbers but more advanced in the matter of production, the Western powers would be controlled by wholly different considerations. Their strategy would be based, of necessity, on their technical superiority and their superiority in the way of matériel. Would that suffice, however, for gaining the decision? Air bombardments, as extensive as they may be, cannot halt an invasion of Europe by the Soviet Union and her satellites. Air attacks cannot lead to anything definite unless they are followed by attacks on the ground. It is only then that the effect of the relatively short paralysis caused by the air bombardment may be converted into definite results by the permanent occupation of the terrain. Otherwise, there is the chance that at least a part of the damage will be repaired. Strategic air operations have, therefore, little chance of producing an immediate effect; their result would be, above all, the slow destruction of the enemy's power of production, which would be felt on the field of battle only after a considerable lapse of time. In the battle of giants, as a third world war would be, the destruction of the enemy's power of production might take years. The occupation of Western Europe by the Communist armies could be accomplished in a matter of but 2 or 3 months.

The idea that a Soviet invasion could be stopped by means of small, powerfully motorized armies is likewise to be cast aside as devoid of realism. It is inconceivable that vast spaces, doubtless entire continents, could be defended or conquered by machines. Imagine a hunter armed with a modern automatic rifle and 500 rounds of ammunition attacked in a jungle by 50 natives. Theoretically, he should be able to annihilate all of them. However, it is not possible for him to draw a bead on all of them simultaneously. Therefore, after having put 20 of them out of the way, he could be brought down by the twenty-first.

A war between the East and the West would, doubtless, take the form of a bitter struggle between masses of human beings as well as production capabilities. However, there are limits to everything. To what degree can technical superiority compensate for numerical inferiority, or technical inferiority be compensated for by numerical superiority? No one can say with certainty. However, the fact must not be lost that strategy not only has concrete and tangible factors which must be taken into account, but also imponderable psychological factors.

The Battle of Production

World War II developed the economic and industrial power of America to a point previously unknown, from which resulted an advance which no other nation would be able to equal in our times. Half of the total production of the world comes, at the present time, from the industries of the United States. In case of war, this capacity would be complemented by that of the British Commonwealth and of Western Europe. Let us not forget, however, that one cannot trust Soviet statistics, for they are compiled with a view to propaganda rather than to economic documentation. This is what gives rise to the great differences of opinion in the case of Western experts with regard to the accomplishments of the Soviet Union—some tend to overestimate while others tend to underestimate. If we accept as a basis the Soviet war production figures which were published in 1945, we see that the Soviets realized a fourth of the combined production of the Anglo-American industries, and we have every reason to believe that this result has not been greatly exceeded; on the contrary, it is possible that they have just been reached—the statistics of 1945 having been greatly exaggerated. Matters would be different if the Soviet Union succeeded in dominating the whole of Europe. What the position of the Soviet Union would be in that case is difficult to say. We may, however, obtain an approximate idea of it. Let us take as a guide the results of the German economy during World War II. At that time, the *Reich* was exploiting the industrial capacity of the whole of Europe, and the troops of Hitler occupied the territories which, in the event of another war, would probably fall into the hands of the Soviets. It would clearly be an error to suppose that the Soviets could exceed what the Germans

MAXIMUM ANNUAL PRODUCTION DURING WORLD WAR II

	Aircraft	Tanks
United States	96,370	29,500
British Commonwealth	33,398	22,819
Soviet Union	30,000 (?)	30,000 (?)
Germany	39,807	19,002

FIGURE 1.

did. They could not flatter themselves to the extent of assuming they would be able to rival the organizational capacity demonstrated by the industrial chiefs of the Third *Reich*. We shall not be far off, however, if we estimate that a Europe occupied by the Soviets could attain 50 percent of the productional capacity of the German war economy. What would the combined Soviet and European industries produce tanks as opposed to some 39,500 for the East. An analysis of the other branches of industry would doubtless give results more unfavorable for the Soviets. This would be the case particularly with precision production, which is far more developed in the West. The fact of the matter is that these specialties are the weak point of Soviet production. It is also important to note that the products of

POTENTIAL PRODUCTION IN THE EVENT OF WORLD WAR III

	Aircraft	Tanks
Western powers:		
United States	96,370	29,500
British Commonwealth	33,398	22,819
Total	129,768	52,319
Eastern powers:		
Soviet Union	30,000 (?)	30,000 (?)
50 percent of the German production	19,903	9,501
Total	49,903	39,501

FIGURE 2.

then, and how would they compare with the production of the Anglo-American industries?

Let us take, for example, the two most important strategic weapons: aircraft and tanks. The maximum annual production during World War II was as shown in Figure 1.

If we consider the productional figures from the point of view of an eventual conflict between the East and the West, we must add half of the German production to that of the Soviet Union and compare this total with the combined Anglo-American production. We shall then obtain something like that shown in Figure 2.

Theoretically, according to these data, the West would have an annual production of around 130,000 planes as opposed to about 50,000 for the East. Moreover, the West would produce more than 52,000 Soviet industry are usually of a lower quality than those of the European countries. As regards quantity alone, we can come fairly close to the truth if we say, in a general way, that Soviet production—which, at the beginning, would not exceed a fourth of that of the Anglo-Americans—could, by systematic exploitation of industrial resources of occupied Europe, be raised to a third or a half of the Anglo-American figure. This would make the Soviet Union a substantially more powerful enemy than Germany.

These comparisons lead us, logically enough, to the problem of the material effects of aerial warfare on the battle of production. Among the Anglo-American industries, only the British would be threatened seriously by the Soviets; those of the United States and Canada are out of the practical range of Soviet aviation.

What would be, with respect to aerial attacks, the strategic position of the industrial regions situated in the interior of the Soviet Union and of those working for the East, elsewhere, on the assumption that the Red Army succeeded in obtaining possession of Western Europe? Let us examine, first, the case of the Soviet industrial districts. Three factors make it difficult to paralyze them completely:

1. One of the most important characteristics of the Soviet economic system is its decentralization: aerial bombardments cannot give rapid results unless they are conducted in an intensive form against concentrated industrial zones.

2. The longer the distances to be traversed, the harder the aerial war is to conduct. The danger from antiaircraft defense increases and the continuity of attacks is harder to maintain. In the case of an aerial war against the Soviet Union, the distances from the Middle East to the industrial districts of the Urals are 1,500 to 2,000 miles. The same distance exists from the British Isles to Moscow. It is possible that the atom bomb will change all that, but no one, not even its inventors, can say this for certain. The launching of an atomic war would be, moreover, extremely risky for the Western powers. It is constantly repeated that America now has bombs much more powerful than those which she used against Japan, and that the Soviet Union is far behind in the field of atomic research. However, this argument is without any value! The Hiroshima bomb was much more powerful than is necessary in practice. The capital point is that the Soviet Union is able to produce these bombs. Such bombs would suffice for destroying the very centralized British industries and for making possible raids which would devastate important urban centers of America. The destruction of Europe is the price we would have to pay for an atomic war by the Americans. The tactical employment of these weapons would, perhaps, change matters a bit. However, here again we have a big question mark: would not the employment of these weapons move the Soviets to reply by the strategic employment of these weapons?

3. An aerial war, like any other war, is ineffective unless the objective that has to be reached is reached at the time required; hence, a properly functioning intelligence service is indispensible. What is our situation as regards this matter? For 30 years, the Soviet Union has been hermetically closed to the rest of the world, as was Tibet in the past. In the aerial war against Germany, the intelligence service was relatively easy to manage. Years of business relations with European countries made it possible to know everything about the German industrial set-up. An aerial war against the Soviet Union, however, would not be so simple.

In Central and Western Europe, which could one day be occupied by the Soviets, the problem presents a very different aspect. These industrial regions are situated closer to the British Isles, which would be called upon once more to play their traditional role of a giant aircraft carrier. The shorter flying distances would ease the task of maintaining the concentrated continuity of action, and the centralized economic structure of Western Europe is one more guarantee of success in attacks.

The continental production would be of far too great an importance to the Soviets for them to expose it to such risks. As has already been stated, the industrial zones of the Continent would have the important function of complementing the productive capacity of the Soviet Union in such precision fields as optics, radio technology, and ball bearings, and it is, therefore, very probable that they would be transferred from Europe into the

depths of the Soviet Union. This transfer could not be effected without difficulties, but back of the shelter of the Urals the various manufactories would not only be protected against air attacks, but they would be much closer to their sources of supply.

If the Soviets adopted such a strategy, a third world war would witness the establishment of two great arsenals: America for the West, Siberia for the East. However it may be, it would be a mistake to expect rapid and decisive results from an aerial war. The productional curve of the Soviet Union would only show a tendency to drop slowly. The Soviets could get along for a long time with the war matériel left from 1945 or taken as booty. The West has destroyed its own and closed down the majority of its war industries; the Soviets have continued to manufacture war matériel. Everything considered, it seems as though the productional battle between the East and the West would be of long duration.

The Battle of Numbers

The Soviet Union has 193 million inhabitants; her satellites, 80 million; and adding the 440 million Chinese Communists, we have a total of 713 million. On the other hand, the total population of the United States, the British Commonwealth, and Western Europe amounts to about 850 million.

It is difficult to tell which side certain nations would be on in a future war, while others, such as Germany, may be divided in their allegiance. If the European Continent were totally invaded by the Soviets, its 170 million inhabitants would enter into the orbit of the East.

A general analysis such as this can give only a very superficial view of the problem, and it would be erroneous to attack such a problem by the aid of a diagram. However, it is certain, in any case, that any future war will necessarily assume the form of an intercontinental civil war, in which the two camps will each have their adherents. Moreover, each country, according to its race, its geographic position, and its economic wealth, will differ in military value. It is preferable, therefore, to tabulate numerical strength on the following basis:

1. Fighting forces.

2. Productional forces; that is, forces important from the point of view of war economy, industry, or agriculture.

3. Populations less useful for war industries or agriculture.

Let us consider the fighting forces of the East. According to German sources, the Soviet Army, in 1943, comprised 409 divisions, plus 138 armored brigades, 179 independent infantry brigades, and 85 armored regiments. Let us convert the armored brigades, the infantry brigades, and the armored regiments into divisions of three brigades or regiments: the total may thus be estimated as 543 divisions for World War II. During the first year of the war, the Soviets alone possessed 250 horse-drawn infantry divisions, 150 motorized infantry divisions, 100 armored or mechanized divisions, 10 airborne divisions (it is questionable whether they had transport planes for all airborne divisions), and 20 artillery divisions.

They were able also to assemble an air force of 15 to 20 fleets, comprising 18,000 to 25,000 planes.

In the last war, the Soviet Union mobilized around 30 million men and 3 million women. It is to be noted that the population of the Soviet Union ceaselessly increases at an average of 3 million yearly, or 8,000 a day—a figure almost equal to the combined growth of the remainder of Europe. Therefore, it appears that the war losses of the Soviet Union have already been repaired.

To the 543 divisions of the Red Army, let us add the 74 divisions of the European satellites and the 100 divisions of the

Chinese Communists: the fighting strength of the East then would exceed a theoretical total of 717 divisions, about 1 division for every million inhabitants. Let us note the fact that the normal Soviet divisions are small; they comprise but 10,300 men, while the average strength of the Western division runs from 15,000 to 18,000 men.

Would the Soviet Union have the means for supplying such a mass with modern weapons and for supplying it with the necessary means to keep it in battle? It is more than problematical.

Combat Value

During the war, the propaganda relative to the combat value of the Red Army was without end. It is time to regard things in their correct perspective, casting aside all the exaggerations brought about by propaganda. Words do not suffice for this. We shall base our observations on facts more worthy of trust. Let us compare what the Red Army and the *Wehrmacht*, respectively, did for reaching firm conclusions with regard to so important a point.

The war between Germany and the Soviet Union brought together two nations, one of which had close to 200 million inhabitants, and the other 80 million inhabitants. Proportionally, the Third *Reich* mobilized 325 divisions and the Soviet Union 543 divisions. Of the 325 German divisions, only 190 were engaged on the Eastern front, the rest being tied down in occupied territories. The greatest number of divisions under the orders of the German General Staff in the East was 240, counting the Italians, Finns, Rumanians, Hungarians, and other contingents. A number of these formations, of course, had to watch over the enormously extended hinterland, which equaled the combined areas of England, France, and Italy. The fact is also to be taken into account that the *Wehrmacht*, after the beginning of 1943, fought almost without air cover and was able to keep its units up to only about two-thirds their normal strength. We shall hardly be in error, therefore, in saying that the Soviets possessed a numerical strength of about three to one in comparison with the Germans.

Let us pass on now to the problem of equipment. The oft repeated assertion that the Soviets had to fight against the whole of the European war potential merits examination. Figure 3 furnishes interesting elements of comparison between the respective productions of the German and Soviet war industries.

The German General Staff had to divide its war production, as well as its forces, between several theaters of operation. The *Luftwaffe*, for example, had to divide itself between the East and the West, while German industry was undergoing the violent bombardments of the allied air forces. The claim that the Soviets lost a greater part of their production capacity as a result of the German irruption does not change our estimations: according to Soviet statistics, production in the USSR was steadily increased and, in certain branches, if we are to believe the official Soviet archives in the matter, the Red Army must have had superiority in point of equipment over the *Wehrmacht*. However, there is, in all this, something which does not ring true: either the Soviet statistics are inaccurate, or the combat value of the Soviet troops has been overestimated—perhaps both.

Contrary to what is claimed by the Communist propaganda with regard to the high deeds of the Red Army during the last war, it can be established that, in comparison with the *Wehrmacht*, the Soviet forces proved inferior. However, the German forces, although they always gave a good account of themselves, even when outnumbered three or four to one, could not, in spite of their qualitative superiority, obtain victory over an enemy with crushing economic superiority. The same was true as regards the Finnish-Russian

War. The numerous lakes and the dense forests which characterized this part of Northern Europe prevented the Soviets from deploying their enormous armies. They were, therefore, obliged to fight with numerical equality with the Finns, which brought out clearly their inferiority. Afterward, the Communists the world over claimed that the Soviet defeats were only a "military ruse," destined for hiding from the Germans the formidable strength of the Red Army. It goes without saying that this is a poorly conceived joke.

Can one bank on the armies of the satellites in Europe? The Soviet Union is not without some doubts with regard to this matter, as well as, to a certain extent, on the trust she can place in the Red Army itself. It is no secret that, in the Baltic countries, in the Ukraine, and in many another region, the German troops were hailed as liberators; and this feeling was only modified later—and not always out of love for the Communist regime—as a result of the senseless frenzy of the SS troops and the pitiful requisitions inflicted on the peasants. However, in spite of all that, during the war, a Russian army was organized by the Germans: it comprised nearly 500,000 men, all anti-Communist, principally Ukrainian, White Russian, and Tartar origin. It must not be forgotten, either, that in the last war the Soviets were fighting against an almost traditional enemy. Therefore, one is justified in wondering whether the Russian people, in a war against Western nations, would give evidence of the same endurance and the same force of will that they showed against the Germans.

Let us call attention especially to the fact that the Germans did not owe their defeat to the Soviet resistance alone, but in large measure to the absurdity of their own strategy. It was necessary to fight the Soviets in Poland, in White Russia, in the Ukraine, and in the western regions of the Soviet Union. The farther one went into the steppes, the longer the line of communications became and the more the front was extended. We shall leave the task to others of deciding how the Battle of Stalingrad would have turned out if Hitler, in addition to his 190 divisions engaged in the East, had been free to draw on the 135 other divisions stationed in occupied territories. Some 50 divisions, by way of reinforcement, would no doubt have made all the difference in the world in a struggle between two nations, one of which possessed 80 million inhabitants and the other 200 million inhabitants. In 1945, the Red Army was already showing signs of demoralization.

In spite of all the factors that have been

COMPARISON OF GERMAN AND SOVIET PRODUCTION

	1942	1943	1944
Aircraft			
Soviet Union	8,000	18,000	30,000
Germany	15,557	25,537	39,807
Tanks and armored vehicles			
Soviet Union	20,000	30,000	30,000
Germany	6,180	12,063	19,002

FIGURE 3.

mentioned, it will not be wise to underestimate the danger which today threatens the West. Whatever may be the morale of the Soviets, an army which does not find itself faced with serious resistance (and that would be the case with the Soviets in Europe at the present hour) does not need to fear demoralization, at least not during the first phases of a war.

The true value of the satellite peoples of the East resides less in their utilization as combatants than as workers. The German and Czech nations, which are of a high technical development, joined with France, Belgium, and Holland, could, in case the Soviets invaded the whole of Europe, furnish millions of mechanics, fitters, radio specialists, and other skilled artisans which are so sadly lacking in the Soviet Union. From the Danube countries, which are advanced from the point of view of agriculture, the Soviets could, at the same time, draw large contingents of farm personnel. Hitler furnished an example of this by employing 8 million foreign workers in the service of the Third *Reich*. In reality, the Soviet Union could, militarily or economically, exploit all the nations within its sphere of influence; only a few primitive Asiatic peoples would not be, for ethnological reasons, of any use for war.

How does the problem of manpower appear in the case of the Western nations? During the last war, the United States mobilized some 11 million men, of which only about 8 million could be incorporated into the Army or Air Forces. If a more intensive mobilization were undertaken in the United States, it would probably affect production.

Altogether, the United States furnished 97 divisions, and the British Commonwealth, 67; that is, a total of 164 divisions for the Anglo-American ground forces.

This was a singularly meager result, if one considers the vast populations of these world powers. How is this to be explained? A large proportion of the peoples who make up the British Commonwealth are inapt for ethnological reasons for any military utilization or for utilization in connection with the war economy. This is especially the case with the dark races. India, with its population of several hundred million, furnished only 16 divisions, and the British colonies no more than 2. As a matter of fact, the British Commonwealth can count on only the 75 million inhabitants of the British Isles and the white races of its dominions.

Mobilization in a Third War

The object of the Atlantic Pact is to organize the defense of Europe, an enterprise comparable to that of the construction of a dike for preventing an inundation. In order to calculate accurately its length and its breadth, we must first know the volume of the water and the pressure to be held. There is no doubt but that the Soviet Union would be able, during the first 6 weeks of a future conflict, to commit about 130 divisions in Western Europe alone. Within six more months, this number could be increased by 70 additional divisions. Even then, the Soviets would have sufficient forces to operate with powerful armies in Scandinavia and in the Balkans, as well as in the Middle East and the Far East. In addition, we must count on from 60 to 65 satellite divisions. Moreover, the Soviets could commit about 10,000 planes in the operations in Europe.

Today, as in the past, the Soviet Union could begin her mobilization several weeks before the opening of hostilities, especially in the eastern and central regions of the country. It should be remembered that at the time of World War I, the Siberian garrisons were in a "state of alert" as early as April 1914. Before the opening of hostilities between Germany and the Soviet Union in the last war, the troops of the Red Army between the Baltic and

the Black Sea comprised 118 infantry divisions, 20 motorized divisions, and 40 independent armored brigades, or a total of some 151 divisions. In the spring of 1940, the Red Army was composed of around 223 divisions, and, let it be noted, was maintained at this level at a time when the Soviet Union was not yet at war, but only in a state of alert. Her approximate mobilization capacity would probably be as follows:

Z-day (the beginning of mobilization, not of hostilities): 175 divisions of the permanent Army; Z-day plus 42: 100 additional divisions, or 275 divisions; and Z-day plus 180: 100 additional divisions, or 375 divisions.

The distribution of the Soviet divisions, complemented by those of the satellite countries, would be possibly about as follows:

Z-day.—Central and Western Europe: 90 Soviet, 10 Polish, 5 Czech; against Scandinavia: 15 Soviet; the Balkan Peninsula: 10 Rumanian, 5 Hungarian, 5 Bulgarian Caucasus and Turkestan: 20 Soviet; Far East and Siberia: 30 Soviet; and in the interior of the Soviet Union: 20 Soviet divisions—making a total of 175 Soviet and 35 satellite divisions.

Z-day plus 42.—Western Europe: 130 Soviet, 20 Polish; 10 Czech, against Scandinavia: 20 Soviet; the Balkan Peninsula: 20 Soviet, 15 Rumanian, 8 Hungarian, 7 Bulgarian; Caucasus and Turkestan: 50 Soviet; Far East and Siberia: 30 Soviet; and in the interior of the Soviet Union: 25 Soviet divisions—making a total of 275 Soviet and 60 satellite divisions.

Z-day plus 180.—Western Europe: 200 Soviet, 25 Polish, 14 Czech: against Scandinavia: 30 Soviet; the Balkan Peninsula: 20 Soviet, 20 Rumanian, 8 Hungarian, 7 Bulgarian; Caucasus and Turkestan: 60 Soviet; Far East and Siberia: 30 Soviet; and in the interior of the Soviet Union: 35 Soviet divisions—making a total of 375 Soviet and 74 satellite divisions.

These figures are purely hypothetical, but they are based, nonetheless, on well-founded information. Such a deployment of forces is quite within the reach of the Soviet Union, and we have presented it in order to impart an idea of the scope of the task which this implies.

TROOPS NECESSARY FOR THE DEFENSE OF WESTERN EUROPE

Country	Available in 3 Weeks		Available in 3 Months	
	Divisions	Planes	Divisions	Planes
United States	7	A combined strength of 6,000 planes	20	A combined strength of 10,000 planes
British Commonwealth	10		15	
France	40		60	
Belgium	6		8	
Holland	6		8	
Italy	20		30	
Norway	3		3	
Denmark	2		2	
Total	94*	6,000	146*	10,000

* Based on the strength of Soviet divisions, the figures listed would be equivalent, respectively, to 144 and 294 Soviet divisions.

FIGURE 4.

The opinion is often expressed that the Soviets would not be capable of invading Europe because of the difficulties they would encounter in attempting to supply such a mass of men. This opinion merits examination. As long as there is no engagement of arms in Western Europe, there will be no great battles—the principal cause of the consumption of matériel in great quantities. According to the reports, large reserves of provisions and fuel have been accumulated in the satellite countries which are destined to serve as advanced bases.

Moreover, the Communist forces have the habit of living off the country, and their supply problems are, consequently, simpler than those of the Western armies. In addition, as regards matériel, it is to be supposed that the matériel of the 543 wartime divisions was carefully stored at the conclusion of hostilities, and will permit the equipping, with it, of at least 250 divisions. Moreover, the weapons taken from the Germans and the Japanese could equip 50 additional divisions.

Modern weapons have been manufactured almost without interruption in the Soviet Union since the end of the last conflict, while, during the same time, the West has dismantled its war factories and destroyed, or permitted to rust, most of the weapons it used during the war.

Of what size should the armies of the Atlantic nations be to defend, successfully, Western Europe? Certainly our forces would not need to be as large as those of the East, in view of our qualitative superiority. However, it must not be forgotten that the front, extending from Holland to the Adriatic, would have a length of nearly 750 miles. We will not be able to hold it unless we can dominate it in time as well as in space over its entire length. This would require not only sufficient men to man the front, but also forces to control the long lines of communication and the vast hinterland undermined by the Communists. Figure 4 provides an estimate of the number of troops necessary for this task.

Will the nations of Western Europe be capable of such an effort? Is it possible to proclaim there a general mobilization as in the case of the last two conflicts? Just as the hinterland of the Soviets would not be at all certain of the desired response in case of war, we also would have to count on the presence of strong fifth columns—and nothing can be as dangerous as the infiltration of hostile elements into the ranks of our armies.

In the light of these considerations, it is clear that without a full and equal participation of Germany, the defense of Western Europe is strategically impossible, to say nothing of offensive strategy which would be required to bring about decisive results. Slowly, too slowly, at a pace more hesitating than sure, the Atlantic nations are beginning to realize this important fact. How many hard lessons will we need, however, before we do something about it? The re-establishment of a German Army must be effected without any moral or matériel restrictions—or it should not be re-established at all. Human nature being what it is, as long as we distrust Germany, she will distrust the allies, and we cannot expect to meet with any great military ardor on her part under the orders of persons whom she regards as dangerous or unworthy of confidence. There is only one argument which militates against German rearmament; there is no sense to the others. The important argument against German rearmament is that if it were accomplished it would furnish the Kremlin with a *casus belli.*

Conclusions

In the event of a Soviet invasion of Western Europe, American intervention in the land battle would not be effective for at least 3 months. Even at that time,

it could be only on a limited scale, because a very considerable portion of the American forces, as well as those of Great Britain, would be held down in the Asiatic theaters of operation. If the Anglo-American divisions (and here we can assume a total of 164 divisions, based on World War II figures) have to be divided between these different theaters (Western Europe, Middle East, and Far East), we could not count on more than 50 or 60 divisions for the defense of Western Europe—a wholly inadequate figure for a task which requires at least 120 to 150 divisions. Any strategic offensive against the Soviet Union would be out of the question without a minimum of 300 divisions deployed successively in space and time over a period of at least 3 years.

Some 200 divisions would be required in Europe; 50 in the Middle East; and 50 between Southeast Asia and the Far East. The Germans took a chance with 240 divisions and got only as far as Stalingrad. It follows, then, that only the countries of Western Europe would be able to tip the scales in favor of the Anglo-American countries.

This leads us to the strategic importance of Western Europe, which, whatever be the present height of its morale, retains, nevertheless, a decisive military value. As we have seen, the important question for the West is that of fighting forces, while for the East it is that of specialized productional labor. If the Anglo-American powers can defend Europe, that would not only give them the forces required, but also an infinitely more favorable position for winning the battle of production, since they would thereby block the Soviets from the exploitation of many an important industrial region. The loss of the whole of Europe probably would have as its result the prolongation of the war for years. In the absence of fighting forces, the question may be asked whether it would ever be possible to arrive at a decision.

There exists a dangerous tendency toward attaching too much weight to the industrial capacity of the United States —an enormous potential, it is agreed, but a potential concerning which both Europeans and Americans themselves seem to have an exaggerated idea. Everything has its limits, even the productional capacity of the New World, as limitless as it may seem at first view. It is not possible, as many persons are ready to believe, to put 10 tanks or planes in the battle for every 2 that the Soviets produce. It is very probable that the proportions would be much less favorable for us. Moreover, the Soviet Union is, from the point of view of industry as well as numbers, a much more dangerous enemy than was Germany.

Let us hope that the close co-operation of the great European nations—England, France, Germany, and Italy—will soon be a reality. It is the only policy that can save Europe. Our statesmen must bear in mind that the stronger the European armies are the less chance there will be of war, and, if war proves inevitable, the greater the chances will be of winning it rapidly.

In spite of the serious warnings given by this article, may I remark that pessimism is not my line. However, I feel obligated to tell the truth. We must all realize that we are passing through a delicate, not to say perilous, phase of our history. We are living in apocalyptic days, in which it is not the effort of some few individuals that will save us, but the sincere co-operation and collaboration of all.

The Submarine and Antisubmarine Position Today

Digested by the MILITARY REVIEW from an article by Rear Admiral G. P. Thomson in "The Navy" (Great Britain) October 1952.

THE end of 1942, when U-boat losses increased from an average of 3 to 12 a month, may be regarded as the end of a submarine era. By then it had become clear that the submarine which had been an important unit in the navies of the world for the previous 35 years was no match for an opponent adequately provided with antisubmarine vessels and aircraft. The Germans, accordingly, at once concentrated on developing a true submarine—a vessel that would normally navigate submerged at an effective speed—instead of a surface vessel relying for her offensive and defensive power on her ability to submerge when required. Shortage of manpower and material and allied air raids, however, thwarted their plans and they only succeeded in pointing the way to the types of true submarines built or building at the present time.

The first of these is the streamlined, large battery, snorkel-fitted submarine which can maintain a submerged speed of 17 knots or more for about an hour. Strictly speaking, this type is not a true submarine, for although she can, and no doubt will, remain submerged from the time of leaving harbor until the completion of her patrol, she must keep her snorkel above the surface—at periscope depth—when using her engines. In fine weather, when there are no waves to cause blobs of light on the radar screen, radar now can detect a snorkel at distances of many miles, thereby restoring to aircraft some of the great value they had in World War II for convoy escort work. Moreover, while a submerged speed of 17 or 18 knots enables a submarine to evade our wartime antisubmarine vessels, it will not give her immunity from a destroyer or the new fast frigates we now have under construction.

Thus, given the necessary time to build adequate numbers of fast, modern antisubmarine vessels and aircraft, the Western nations should be able to deal effectively with Soviet submarines which are now reported to number 375—old and new. However, at the end of the war, Germany had under construction a much more formidable type of true submarine which dispensed with the snorkel and was to be driven by two Walther cycle turbine engines using hydrogen peroxide of 90 percent purity as oxidant for fuel and giving, it was claimed, a speed of 25 or 26 knots. The United States Navy has experimented with this design and, in addition, is presently constructing a submarine to be driven by nuclear power. The latter is expected to be ready by 1954, and as no question of refueling arises, she will, of course, have almost unlimited range.

United States naval authorities have the utmost confidence in this nuclear power driven submarine and, according to unofficial reports, regard it as more satisfactory than the Walther cycle engine submarine in view of the explosive nature of hydrogen peroxide and the possibility of available supplies being required for guided missiles. In both types, air for the crew can be carried in condensed form, and the exhaled carbon dioxide removed by conventional means. Neither radar nor aircraft will be effective against them and their high speed will give them the speed of all but the very fastest surface vessels. Indeed, the problem of locating and destroying submarines proceeding at 25 knots at great depths is not going to be easy to solve.

Postwar Developments

This is not to say that antisubmarine measures have been standing still. On the contrary, there have been remarkable developments since the war in methods of detection, notably in radar, asdic, sonar, and magnetic airborne detection devices, and there has been even greater progress in the missiles employed for destroying a submarine—depth charges, depth bombs, projector charges, homing torpedoes, and rockets. The underwater rocket and the homing torpedo represent probably the most radical advances in undersea warfare since the war. The rocket launcher, which has already been installed in a number of ships in the United States Navy, fires a relatively large rocket with a heavy explosive charge at variable ranges. Its equipment incorporates an effective fire control system which eliminates the difficulty that the firing ship had during the war of losing asdic contact at close range. This meant that other vessels were required to maintain contact while she did the killing.

The homing torpedo is likewise a very valuable addition to the armory of antisubmarine missiles. The cost is many times more than that of the conventional torpedo because of the complicated electronics and sonar gear built in, to guide it to the submarine. There is, indeed, little doubt that once a submarine's position has been revealed—either by detection or by her attack—its subsequent career is likely to be harried and brief.

A Problem to Solve

Detection of a completely submerged submarine, however, is still the main problem to be solved, for the effective range of detection is less than a submarine's attacking range. Utilizing her own asdic installation to fire torpedoes from below periscope depth and firing homing torpedoes propelled by electricity which leave no wake and which may be set to circle until they find their quarry, the submarine still represents a most dangerous threat to shipping. Moreover, until underwater detection devices are developed which exceed the range of the submarine's missiles, she is likely to remain so.

On the other hand, a submarine commander requires much training, initiative, and good judgment to make a successful attack on a well-escorted target, and in view of the Soviet Union's naval history few of her officers seem likely to reach that standard. It may well be, therefore, that with her immense force of submarines, the Soviet Union will allocate a substantial number for strategic employment—for minelaying and for firing guided missiles on our towns and centers of industry. Hitherto, the bombardment of shore targets from the sea has seldom achieved useful results, but the development of guided rockets and the application of the atomic charge to tactical weapons should make it a much more worth-while operation, even when only one is fired from a submarine. There is certainly no technical or constructional difficulty in adapting a submarine for this purpose, for the United States has already reconstructed one as a prototype for firing guided missiles of the flying bomb type. Trials carried out to date have given very successful results. The Soviet Union may thus find it easier and more profitable to employ the bulk of her submarine force in this way—each submarine carrying one atomically charged guided missile of the *V-1* or *V-2* type—than to attempt to deny the use of the seas to North Atlantic Treaty Organization merchant ships. Equally, if atomic weapons are to be used at all in a future war, the submarine may well prove more successful than aircraft as an atom missile carrier, in view of the increasing efficiency of modern antiaircraft defenses.

Fighter Armament

Digested by the MILITARY REVIEW from an article by Wing Commander I. H. Latif in the "Indian Air Force Quarterly" January 1953.

NO ONE can maintain that the development of air armament has kept pace with the development in the design of aircraft. Instead of progressing as two components of one requirement (like the engine and the airframe), armament and aircraft have kept to different paths. This is particularly true of the Western democracies. How the Soviet Union has progressed can be gauged from the very meager and indefinite information that comes through from Korea. However, even the little information that is available shows that as yet there has been no radical departure from the orthodox armament of the fighter of World War II.

To get a better perspective of the entire problem, one must recognize the basic fact that whether it be in aerial combat or ground attack, the fighter is an "airborne gun." It must be admitted that for the gun to be effective the development of its airborne platform cannot be ignored. However, the tendency in the past has been to concentrate on the latter, and this suggests an imperfect appreciation of the basic fact.

The Problem

With the development in the design of aircraft and the phenomenal increase in their speeds, combat conditions have changed and the problem of their destruction by airborne weapons has become extremely complex. The problem to which an answer must be found is whether, in the immediate future, the cannon or the rocket is likely to prove the most effective weapon for aerial combat.

Like Spain in the last war, Korea has become the testing ground for weapons of future wars. As far as fighters are concerned, indications are that there is little to chose between Soviet and allied aircraft. If the Soviet fighter is faster and has a better ceiling, the American *Sabre* is more maneuverable and apparently has an infinitely better gun sight. In looking at Korea, however, for a guide to the future, one must bear in mind one important factor: lessons have been learned as far as combat between jet fighters is concerned, and to a lesser extent between jet fighters and propeller-driven bombers, but no practical experience has been gained in the destruction of jet bombers by jet fighters.

Modern Aerial Combat

With aircraft capable of transsonic speeds, air combat will be limited to angles of attack of 10 to 15 degrees or less, and even with the speeds of present-day jet bombers interceptions aiming at astern attacks are becoming more and more ineffective. Controlled interception, therefore, aims at positioning the fighters for head-on attacks. With relative speeds of approximately 1,200 to 1,500 miles an hour, the attacking aircraft would have to open fire at a range of 1,500 to 2,000 yards to be able to get in an effective burst with even the best cannon today.

With the experience of World War II as the background and the conflict in Korea as a limited pointer to the future, the immediate problem of modern fighter armament may be stated as being the development of a weapon capable of accurately delivering a lethal dose of explosive at something like 1,500 to 2,000 yards. Modern research, which has sufficient data on the construction of jet aircraft, has established that nothing less than 1.65 pounds of explosive is required to destroy the present-day heavy bomber.

No country in the world can specialize to such a degree that it has special fighters to deal with bombers and others for fighters and ground targets. Fighter aircraft, therefore, must be so designed that they are capable of delivering this 1.65 pounds of explosive as accurately and at as great a range as possible.

Present-Day Armament

The ineffectiveness of present-day armament has been amply demonstrated in Korea. The opinions of battle-experienced fighter pilots attest to this fact. One American ace said that he would willingly exchange the standard American armament of six .50-caliber guns for four 20-mm weapons. He was of the opinion that one hit from a 20-mm weapon was more effective than 15 from a .50-caliber. Another American pilot said that he had to fire 1,400 rounds with his .50-calibers to destroy a *MiG-15*. Possibly his aim was partially responsible on this occasion for the excessive number of rounds he had to use, but there can be little doubt that the .50-caliber armament of the *Sabre* is obsolescent and that it would be much more ineffective against modern jet bombers.

The effectiveness of air armament depends primarily on three factors:

1. Its range.
2. The amount of explosive it can deliver in a given time (or caliber and rate of fire).
3. The characteristics of the explosive head, inasmuch as it affects the accuracy of its flight.

Dispersion is an important factor even though accuracy will depend largely on the pilot himself and his aiming device.

The Cannon and its Drawbacks

To determine the effectiveness of the cannon, one must examine it in relation to the three factors enumerated above.

Range.—The range of a cannon depends largely on its muzzle velocity. The muzzle velocity of the normal cannon today is approximately 2,800 feet a second, which gives it an effective range of approximately 600 to 800 yards. Beyond this range, dispersion and gravity drop become too great to ensure that sufficient rounds find their way to the target. Both the weight and the size of the cannon are great, and German research has indicated that an increase in muzzle velocity by 40 percent will necessitate an increase in weight by 80 percent. Bearing this in mind, it is obvious that to get the required range of approximately 1,500 to 2,000 yards, the weight of the cannon would become so prohibitive that it would be possible to install only one or two weapons in the modern fighter.

Caliber and rate of fire.—These two factors are closely related inasmuch as on them depends the amount of explosive that can be delivered in a given time. It is interesting to note that in World War II to destroy a heavy bomber it required approximately 20 hits from a 20-mm weapon, 7 hits from a 30-mm weapon, or 1 hit from a 60-mm weapon. The number of rounds required to destroy the target is immaterial: what is important is the *time* in which the lethal dose is imparted. Modern combat, as has been pointed out, will seldom allow an attacking aircraft to fire bursts longer that a split second—even if it opens fire at maximum range. In this context, let us examine how far the British armament of four 20-mm guns with a combined rate of fire of 2,800 rounds a minute is effective. A simple calculation will show that even if the pilot opens fire at 1,000 yards (at which range one cannot expect more than 20 to 25 percent hits), with a relative speed of more than 1,000 miles an hour, each aircraft would travel about 750 yards before the attacking aircraft could pump sufficient 20-mm shells into the target. By this time the fighter would have overshot its target. The 30-mm is perhaps the most effective

caliber as far as the cannon is concerned, but it suffers from some serious drawbacks: (1) it is so large that it is not possible to install more than one or two in the modern fighter, (2) its recoil is tremendous, and (3) even with a muzzle velocity of 3,600 feet a second (such as the Oerlikon 30-mm revolver model), it would not be sufficiently accurate beyond 1,200 yards. In spite of these drawbacks, however, it is perhaps the most effective stop-gap weapon for fighter armament. The Oerlikon revolver model is reputed to have a rate of fire of 1,200 rounds a minute. This should give a weight of fire almost 12 times that of the present-day cannon. However, on the whole, one can conclude with some justification that if it must be cannon the answer lies in larger calibers, probably one which is capable of killing with one direct hit. It requires a 55- to 60-mm shell to contain the lethal dose of 1.65 pounds of explosive. The design of modern fighter aircraft would never permit the installation of even one cannon of this size. Its weight alone would be in the region of 800 pounds.

Accuracy.—Apart from sighting which is another problem entirely, the accuracy of the weapon will depend on the characteristics of the explosive head inasmuch as it affects the accuracy of its flight. With a muzzle velocity of 3,600 feet a second, which is the highest obtainable today, the cannon shell is accurate only at approximately 1,000 yards. Soon this will prove inadequate; and we have seen before that any attempt to increase the muzzle velocity appreciably will create problems of weight and size.

Rockets

All this evidence, seen in the light of present-day research, points only in one direction—that modern armament will require an ever increasing caliber and that the cannon can no longer solve our problems. A radical change is necessary, and the rocket, even in its present stage of development, provides the answer.

The rocket is no recent innovation. In World War I, British pilots experimented with rockets and the Vickers *FB 25* was specially designed to carry the Crayford Rocket Gun. In World War II, the Soviets were the first to revive it in their *Stormoviks*, but only for use against ground targets. The Germans, however, were able to introduce it for use in aerial combat just before the war ended. It is reported that in 1945 the ratio of losses of allied and German aircraft was approximately *one to one*. When the Germans introduced rockets the ratio changed to *one to seven* in their favor.

Disadvantages

Until recent years the three great disadvantages of the rocket as compared with the cannon were its weight, bulk, and dispersion. For future combat, however, there seems no likelihood of checking the trend toward larger and larger calibers. The problem then simply becomes: At what stage does the rocket offer better prospects? At 30-mm the cannon is still superior, and, as pointed out, is perhaps the most effective stop-gap weapon, particularly for use against fighters and ground targets. However, experience in World War II proved that it required a 60-mm shell to destroy a bomber with one hit, and German development indicates clearly that from approximately 55- to 60-mm onward the rocket offers better prospects. In any case, the aircraft firing a 60-mm shell would have to be the size of a medium bomber.

As previously stated, the three disadvantages of the rocket are weight, bulk, and dispersion. As far as weight and bulk are concerned, the present caliber requirement of 60-mm is so great that the rocket already is infinitely superior. With the rotating rocket, the fins can be dispensed with without any loss in accuracy.

This not only reduces the bulk considerably, but immediately places internal stowage and belt-feed within the bounds of practicability. With a reduction in bulk it should be possible to decrease the weight of the missiles as well. By introducing missiles with a combination of rocket and ramjet propulsion, and the consequent decrease in the quantity of fuel required, a further substantial reduction in weight would be possible. The main cause of the excessive dispersion of the rocket has been an uneven burning of its fuel and the low initial velocity. Scientific research aimed at improving the quality of the fuel would reduce this handicap appreciably. It does not seem at all likely, however, that dispersion will ever be completely eliminated, at least not in the foreseeable future. To reduce the handicap of this inherent inaccuracy, the incorporation of a proximity fuze would be essential.

Conclusion

Research should be directed toward the development of small combat rockets with an explosive charge of 1.65 to 2 pounds, designed for belt-feed and with an effective range of approximately 1,500 to 2,000 yards. The rotating finless rockets offer the best prospect of internal stowage which is an essential requirement. With better fuel, the weight, size, and dispersion could be reduced, and with a proximity fuze its effectiveness would be enhanced. Eventually, the introduction of missiles with a combination of rocket and ramjet propulsion might be the solution for fighter armament.

NEXT MONTH

The next issue of the MILITARY REVIEW will feature the article "Reflections of a G1," by Colonel John A. Gavin, G1, Academic Staff, Command and General Staff College. The author points out certain areas in the personnel field which he feels have needed staff or command attention or emphasis.

Colonel Gavin states that a G1 of any command echelon must recognize the fact that he is dealing with policies which affect human beings. Accordingly, he must evolve policies in the name of his commander which are fair and just to all concerned, and make certain that these policies are carried out to the letter. It remains the G1's responsibility to strive constantly to put across to his commander valid suggestions and recommendations designed to improve all aspects of personnel management and activities.

"German Strategy and its Errors in World War II," from *Rivista Militare* (Italy), will be included in the "Foreign Military Digests" section of the magazine. The article discusses the major strategic errors that were committed by Germany in World War II, citing that they were the principal—but not the only—elements that brought about the German catastrophe.

The article points out that Germany's major errors were in permitting the evacuation of British forces at Dunkerque, and in failing to exploit her success in the Mediterranean theater after the collapse of France.

BOOKS OF INTEREST TO THE MILITARY READER

THE DECLINE OF IMPERIAL RUSSIA. By Dr. Hugh Seton-Watson. 406 Pages. Frederick A. Praeger, Inc., New York. $7.50.

BY MAJOR ROGER E. LAWLESS, *SigC*

Dr. Seton-Watson's new work deals with the last 60 years of Imperial Russia. The period, roughly between the Crimean War and World War I, is divided into three sections: the reign of the Tsar Liberator, Alexander II (1855-81); the period of reaction (1881-1905); and the "Revolution" of 1905 and its aftermath (1905-14). In brief, the book seeks to answer a long-standing question regarding the Bolsheviks—How did they get that way?

These 60 years are not only in themselves a period of great historical interest; they are significant for other countries and other periods because the same social, economic, and political conditions which gave Lenin his opportunity, and which are giving birth today to various types of national and social revolutionary movements in many parts of the world.

Lenin's opportunity came as a consequence of rural overpopulation and mass misery, the existence of a revolutionary intelligentsia, a conspiratorial party, and anarchy following the destruction, from without, of a hitherto all-powerful bureaucracy. His revolution erected a regime which became infinitely more oppressive, reactionary, cruel, and authoritarian than the Imperial Government ever was.

This book then is a penetrating analysis of the mainstreams of the declining decades of pre-revolutionary Russia and clearly establishes that the country, as a whole, was trying to catch up with the advances made by Western Europe. Then, as now, Russia seemed to be one step behind in everything except intrigue.

In Imperial Russia, there was a belated appreciation of representative political institutions; proved by the wide and enthusiastic participation in elections and a reasonable degree of freedom of expression. Industry made great strides, banking and commerce became important, skilled factory workers swelled in numbers, and the professional class expanded rapidly. Even the gap between the educated liberal *bourgeoisie* and the democratic socialists with the masses was diminishing with every passing year. However, this rapid change in the basic social and economic structure was nullified by one immutable and decisive factor—the dogma of autocracy. The tragedy of Imperial Russia was caused by the Tsars' insistence on absolute powers which they were incompetent to wield; and so, in the end, they lost all.

The history of these last 60 years throws a light on some of the problems that most urgently beset the statesmen of our own day and provides an impressive array of mistakes which they would do well to avoid in order to safeguard the survival of the free world.

Dr. Seton-Watson's latest work is painstaking, and most certainly will be a boon to the serious student of the enigma that is Russia.

NOW IT CAN BE TOLD. By James Gleeson and Tom Waldron. 188 Pages. Philosophical Library, New York. $3.75.

BY LT COL DANIEL A. NOLAN, JR., *Inf*

In wartime, heroism is commonplace. It is to the credit of the authors of *Now It Can Be Told* that they have selected seven commonplace incidents and, by the skillful dramatization of which the experienced newspaperman is capable, have transformed them into seven tales that deserve place in the gallery of heroic achievements of all wars of all ages.

The Britisher will respond to the stories of the "Merville Battery," the "Railway Wreckers," "The Non-Commissioned Envoy," and the "Canoe Raiders"; the American will pick up an extra pound of the pulse to the stirring accounts of "The Visiting General," and, especially, "Torpedo Eight"; and true lovers of freedom anywhere will thrill to the vivid history of "The People's Strike."

James Gleeson and Tom Waldron are newspapermen. They bring to their book their consummate skill as tellers of tales in the terse, informative, short with words, long with meaning style of the trained journalist. And with equal skill they have selected for their book incidents of World War II that, of themselves, naturally draw reader reaction.

To review the individual stories would be to dull the essence of the book. Whatever your calling, whatever your secret ambitions, you will find something you wish you could have done—and surely would have done—if yours was the problem.

But, no! We cannot dismiss "Torpedo Eight" quite so casually. If you do not already know the story—and many of you who once did may have forgotten it—you should really read the graphic narrative of one of the most heroic incidents of World War II. Added to the recital of the gallant defense of Midway itself is the dramatic account of the torpedo squadron from the carrier *Hornet* that, against impossible odds, bore in on the Japanese fleet and stalled and damaged it to such an extent that it could be completely routed by follow-up forces. Of 29 men in 15 torpedo planes, only 1 escaped alive.

GREAT ESCAPES. Compiled and edited by Basil Davenport. 409 Pages. William Sloane Associates, Inc., New York. $5.00.

BY MAJ GRANVILLE W. ACWORTH, *British Army*

Escape stories are always exciting and Mr. Davenport's collection certainly deserves this description. His collection also is notable for its high literary merit and the unusually wide field which he covers.

Mr. Davenport begins his collection with the escape of Herodotus in the twelfth century B. C. and climbs up the ladder of history, presenting the escapes of famous personages such as Mary, Queen of Scots; Charles II, the young pretender; Louis Napoleon; Winston Churchill; and Eamon de Valera. He concludes the collection with escapes made during the two world wars.

Many of Davenport's *heroes* were in civil prisons and most of them received help from outside sources in making good their escapes. It must be confessed, therefore, that some of their feats fall rather flat when set against the escape exploits of modern prisoners of war. This is especially true of the autobiographical examples which might well have been considerably abridged.

One could have wished for more modern escape stories at the expense of some of the famous names of history and of the few poems which appear rather incongrously in a book of this sort.

But, perhaps it is unfair to compare *Great Escapes* with these modern tales, as it covers a different field. All things being considered, Mr. Davenport presents, most ably and attractively, a collection of stories of unusual interest and variety.

THE EAGLE AND THE ROOTS. By Louis Adamic. 531 Pages. Doubleday and Company, Inc., New York. $5.00.

BY LT COL MABRY G. MILLER, *Inf*

The author, Louis Adamic, was born in 1899 in Blato, Slovenia—then Austrian territory, but now a part of Yugoslavia. Emigrating to the United States in 1913, he served in the American Army during World War I, and, in the 1930's and 1940's gained renown as an author of such books as *The Natives Return* (written after a return visit to Yugoslavia), *The House in Antigua, My America,* and *Whats Your Name. The Eagle and the Roots* is his final work completed just prior to his death in September 1951.

The book, in an interesting manner, gives the reader an insight into the history of the revolutionary movement in Yugoslavia from its inception in the days immediately following World War I up to the present time. It covers the economic, cultural, and political status of the country as it exists today under Tito. The open-minded reader will find himself transplanted into the partisan movement and will be able to follow its history as the author dramatically describes the struggle of the common people for self-rule and better living conditions. The reader must keep in mind the fact that the author is a native-born Slovene who has made his name in America, but who has maintained very close connections with the conditions in his native land through his mother, sister, and brothers as well as close friends still residing in Yugoslavia. Naturally, the reader can accept the authors relation of facts and can interpret and evaluate them as he may see fit. As to the future of the country, however, the author requires the reader to supply his own conclusions. In fact, the entire book leads up to a question concerning the future of the world, and especially the part Yugoslavia will play in this future. The author refuses to hazard a guess—much less make a prediction—concerning the future.

The book traces the development of communism in Yugoslavia from 1918 up to the present time by following the lives of Tito and his major subordinates—many of whom were somewhat close friends of the author in his youth. It attempts to explain the *why* behind the movement, and the necessity for it, as well as to justify its actions from the viewpoint of a native-born son. The author is extremely critical of the present regime because it has not opened its doors to let the world see what is going on inside the country. However, he does present fairly the regime's reasons for its so called "closed door" policy.

As a whole, the book deals with the struggle of an oppressed population of this small Balkan country as it fought to overcome the iron heel of fascism, while at the same time attempting to put an end to a decadent monarchy (in exile) which was supported by the Western powers and the powerful Catholic Church. It shows how these people struggled against overwhelming odds, how they never received the promised aid of their Anglo-American or Soviet allies, and how they were, in fact, forced to fight against sponsored elements who actually were collaborators. The book concludes with an excellent picture of the country as it exists today—completely separated from, and even threatened by, the Soviet bloc, and with little aid from Western agencies.

AMERICAN DIPLOMACY 1900-1950. By George F. Kennan. 154 Pages. The University of Chicago Press. $2.75.

CHALLENGE AND RESPONSE IN THE MIDDLE EAST: The Quest for Prosperity 1919-1951. By Hedley V. Cooke. 366 Pages. Harper and Brothers, New York. $4.00.

THE COUNTERFEIT REVOLUTION. By Sidney Lens. 272 Pages. The Beacon Press, Boston, Mass. $3.75.

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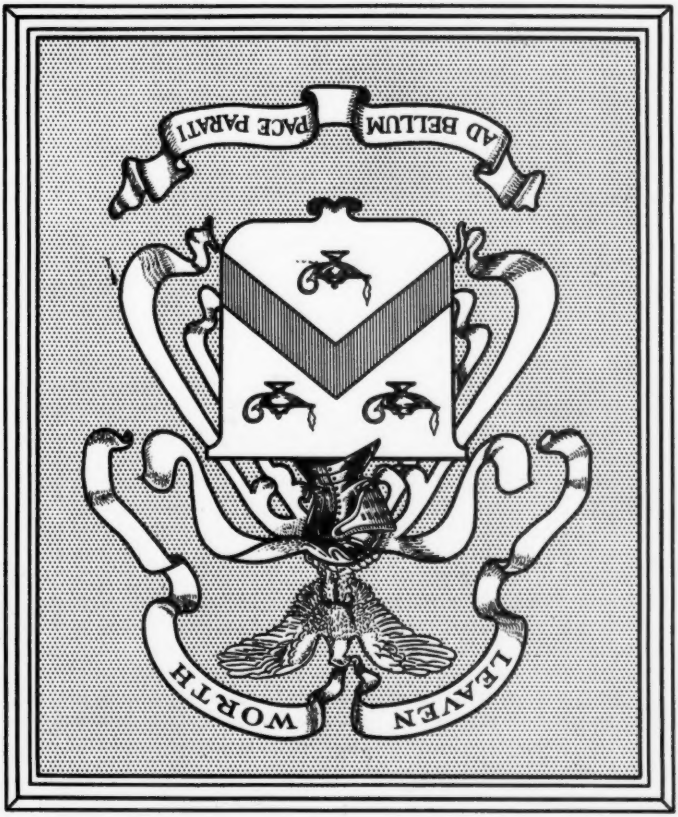
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